The · School · Arts · Magazine

AN · ILLUSTRATED · PUBLICATION · FOR · THOSE
INTERESTED · IN · ART · AND · INDUSTRIAL · WORK

PEDRO · J · LEMOS · Editor

DIRECTOR · MUSEUM · OF · FINE · ARTS · STANFORD UNIVERSITY · CALIFORNIA

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AN ILLUMINATED PORTION FROM THE BOOK OF KELLS, A CELTIC DECORATED MANUSCRIPT EXECUTED IN THE EIGHTH OR EARLY NINTH CENTURY

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"The Most Beautiful Book in the World"

OTTO F. EGE

IT MAY seem presumptuous to select one book and acclaim it the most beautiful book in the world, and stranger still to accredit this distinction to a book produced centuries before movable type, printing presses, or photoengraving was invented. Yet this distinction the *Book of Kells*, a Celtic decorated manuscript executed in the eighth or early ninth century, rightly deserves.

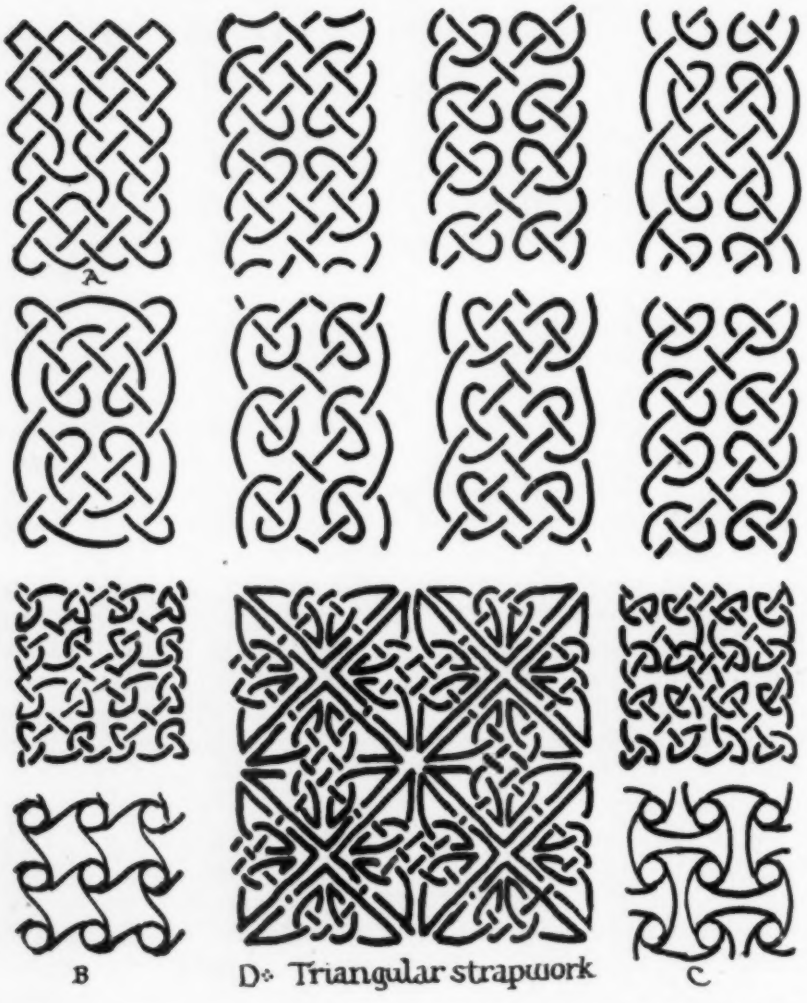
A book beautiful is a composite whole. Its beauty depends first upon literary content; then legibility, character, proportions and spacing of letters (written or printed); next texture and color of materials used (paper, skin, leather or metal); and finally upon the illustrations and the enrichment of initial letters, head or tail pieces, special pages, borders, and binding. The *Book of Kells* is such a consistent whole. The text consists of the four Gospels, the Eusebian Canons, and the geneology of Christ, written in a very legible and beautiful half uncial on leaves of thick, finely glazed vellum of which 339 remain and probably 58 are missing.

Remarkable as are the remains of the book, the cover and case must have been even finer. We learn from the earliest reference to the book, then known as the *Large Gospel of Cille*, that it was stolen in the year 1006 and after being despoiled of its gold binding studded with stones and of its case or cumdach, as it was called, it was concealed under sods in a bog and not recovered for "twenty days and two months." Cumdachs or book shrines are seldom found outside of Ireland and they were carried, with their sacred contents, by chieftains before them in battle. The cumdach of the *Book of Kells* was one of the very few wrought in gold, silver and bronze being the usual metals.

This cumdach and binding are probably lost for all time, but now our admiration is excited by the baffling intricacy, invention, extreme minuteness and elaboration of the pattern with their harmonious subdued coloring, all executed on the vellum leaves with a skill that is nothing less than marvelous. The Celtic note in art is form, and form in its simplest constituent—line. The Celt like the Saracen developed line to the utmost and upon very simple networks. He was more interested in production than reproduction, he was synthetic not analytic. Therefore he played on the same groundwork hundreds of times, slight changes developing new patterns. This is true whether he worked in stone, with metal, or on vellum. His page

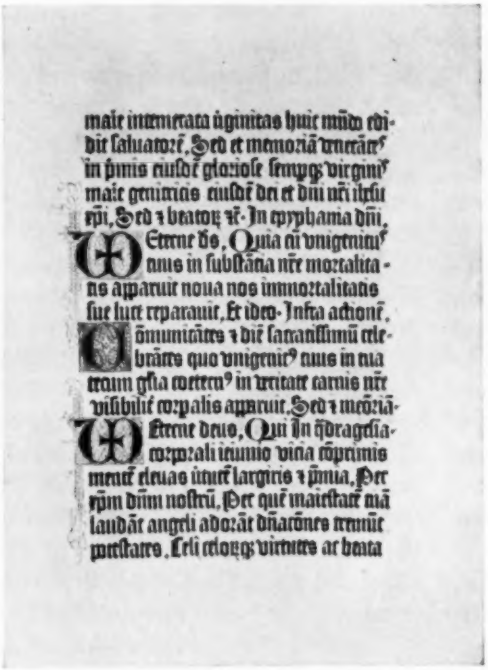
Celtic Interlacements

Basis Eight Strands Plaited



A Simple plaiting with horizontal and vertical breaks
B Circles connected with "S" curves. C with "C" curves

A



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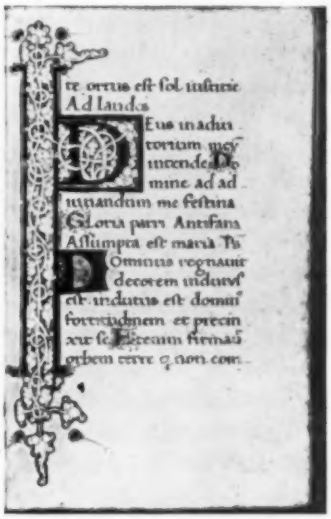
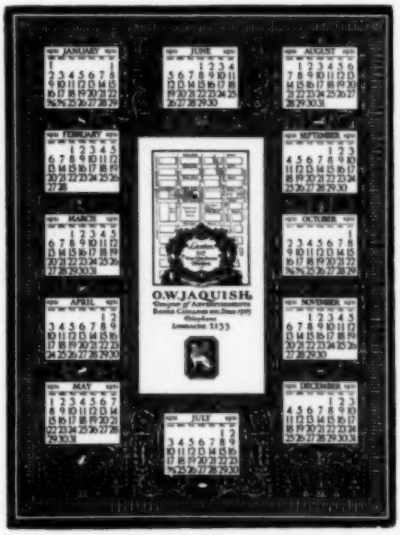


A. PAGE WRITTEN AND DECORATED ABOUT 1470

B. PAGE FROM FUST AND SCHOEFFER'S PSALTER OF 1457

C-D. MODERN ADVERTISEMENTS

C



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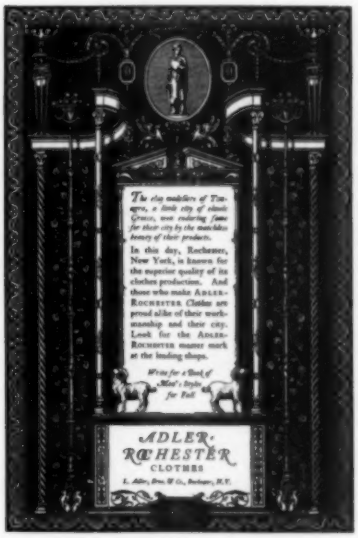

decorations strongly reflect the work of the goldsmith just as the works of the Gothic illuminators reflect the ornament of the architect. When he used figures, he made them also the vehicle for linear patterns. Man, therefore, became a purely geometrical animal. His hair a series of parallel lines or neatly fitted curves, his eyes two discs, his nose a polygonal device, and his dress was cut up into arbitrary compartments. He became successful as a book decoration even though he had no relation to real life.

As beautiful as most of the pages are, the climax of all calligraphic art is reached with the last page of six dealing with the words: "Liber generationis Christi." This last page of the series is taken up with the monogram of Christ ingeniously repeated, adorned with hundreds of patterns of knots, plaits, occasional foliage, birds, reptiles, imaginary or monstrous animals, and man—with a humorous note of two rats nibbling the eucharistic bread under the eyes of a pair of cats. In certain areas 158 interlacements occur in ¼ square inch, and under a magnifying glass no error or faltering of the hand is discernible. The microscopic circles or series of concentric circles are so accurate that one thinks less of the one Pope Benedict XI received from Niotto as a demonstration of his power. The spirals are even more amazing, suggesting the imprint of a coiled watch hair spring. Many modern draughtsmen and scribes have attempted to copy or even trace parts of this "monogram" page but all without success. It is the epitome of Irish art.

It is not only the technical skill displayed, but also the exercise of judgment that makes this book rank in so pre-eminent a plan. The proportions between the intricate masses and the broad plane surfaces, and the fine distribution of narrow bands, as well as the exquisite coloring, a combination of pale yellow, rose, violet, blue and green, show that these early Irish scribes were as great artists as they were craftsmen.

It is interesting to note that this book of wonder excited the admiration of travelers in early days, and one, Giraldus Cambrensis, in the 12th century tells us that it was dictated by an angel and was no doubt also the product of angelic and not human skill.

The *Book of Kells* which was formerly in the famous monastery at Kells is now in Trinity College, Dublin.

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The Making of Block Prints for School Annuals

PEDRO J. LEMOS

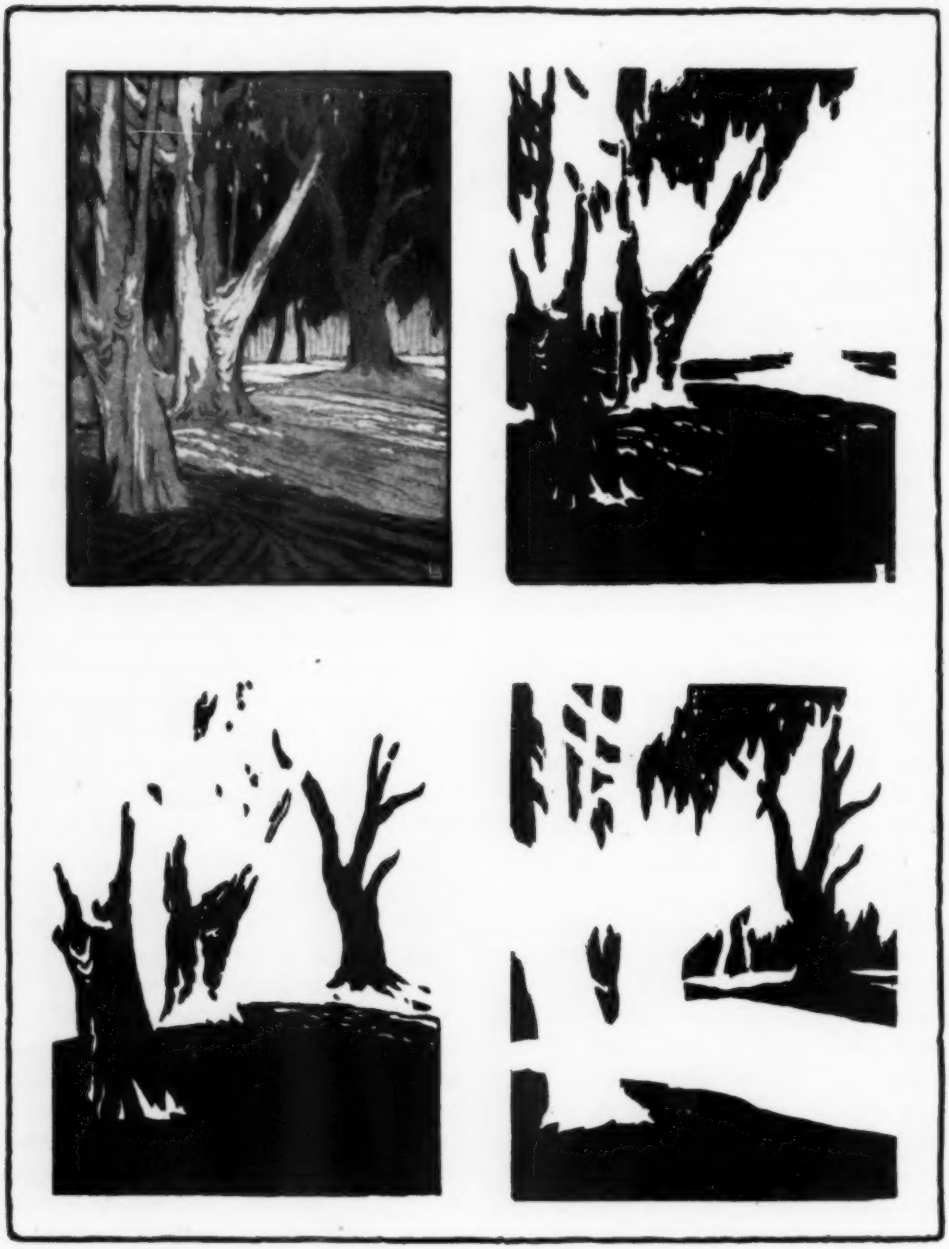
THE use of wood blocks or linoleum blocks for producing artistic prints is growing in popularity each year and is appearing in many forms ranging from mere play work to serious use in the printing trades. The methods of producing good blocks is simple to those who are good at handling a knife or simple cutting tools and many ingenious methods for securing good results have been developed by those who have taken up the work. To many, block-printing means the cutting of motifs in relief for stamping textiles and decorating pillows or hangings. The principle of this practical and fascinating handicraft is similar to the pictorial block prints and to those who have produced this textile work, the cutting and printing of pictorial subjects will be a simple additional step.

The making of prints seems to impart considerable joy to anyone who undertakes such work. Nothing quite equals the thrill that comes to the youngster when he finds that he can make a print of a bow-legged brownie by pressing the rubber stamp on the ink pad and them stamping in onto the paper. Once the student comes in contact with printer's ink the hold is such that, wander where he may through the world's other busy trades, he will always fondly remember his printing days, and many are those who have worked up from printer's devil to leaders in the world's achievements, and this is set down in the year of our illustrious printer President.

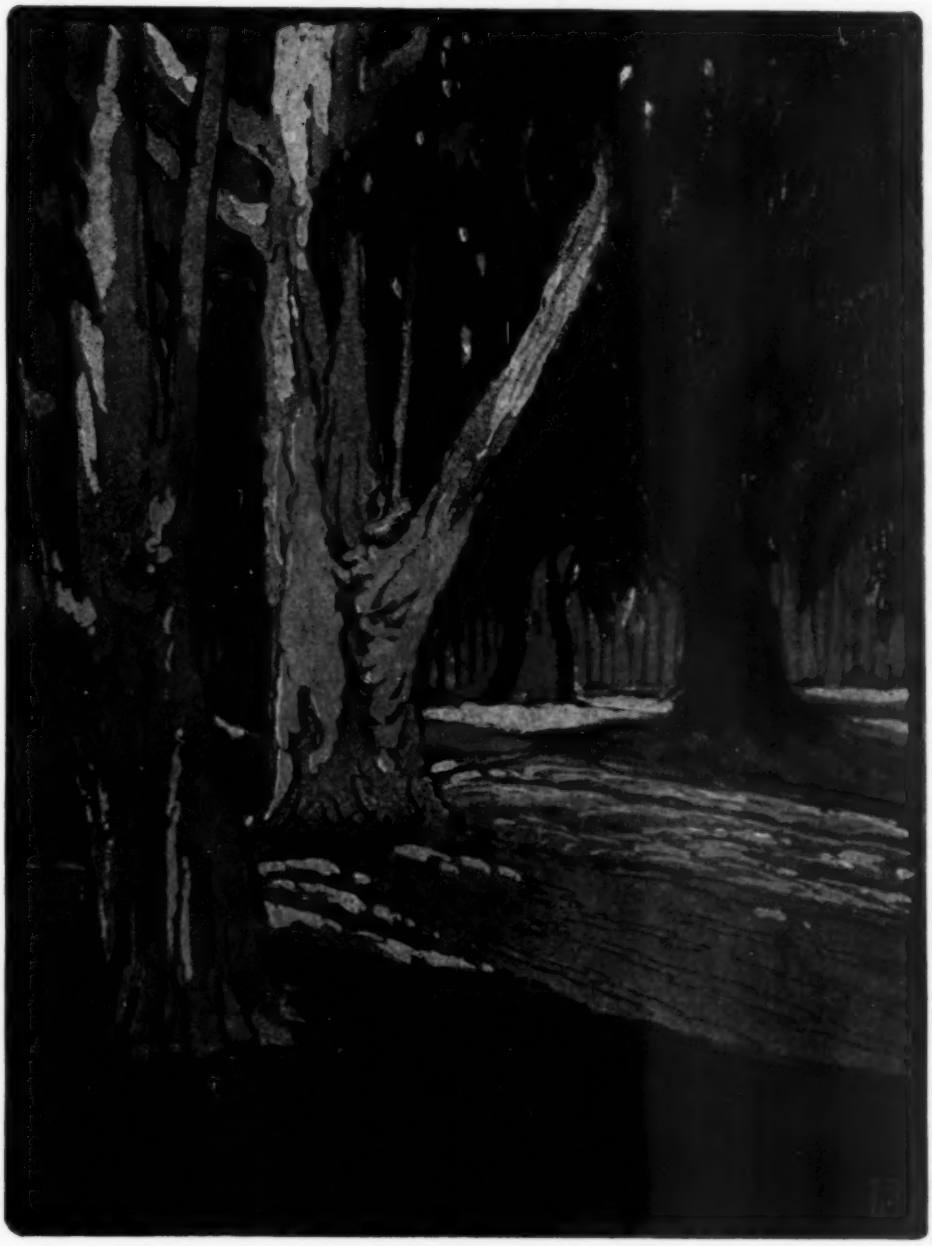
Of ccurse, wood blocks were one of our first mediums for printing and when Coster entertained his nephews by cutting thier names in relief in the bark of a tree, he conceived, according to the Dutch, the first printing type and thus originated printing as we know it to-day.

Wood gave way for metals which made for more durable surfaces, and with Senefelder's discovery of lithography on stone and the present use of copper and zinc for modern engraving methods, the use of wood for engraving became practically an obsolete, if not a lost art.

However, through all the processes and their adaptations by commerce, unfortunately the ever encroaching fault constantly became paramount of so much attention being given to the technical ends that the artistic qualities became lost in the process. Particularly where intermediaries in the way of workmen were used to translate or interpret the artists' work through the method employed, the results were often disastrous. No wonder that artists everywhere almost in an undirected spontaneous international movement sought ways with which they could personally produce artistic prints, either by wood, etchings or lithography, in order to

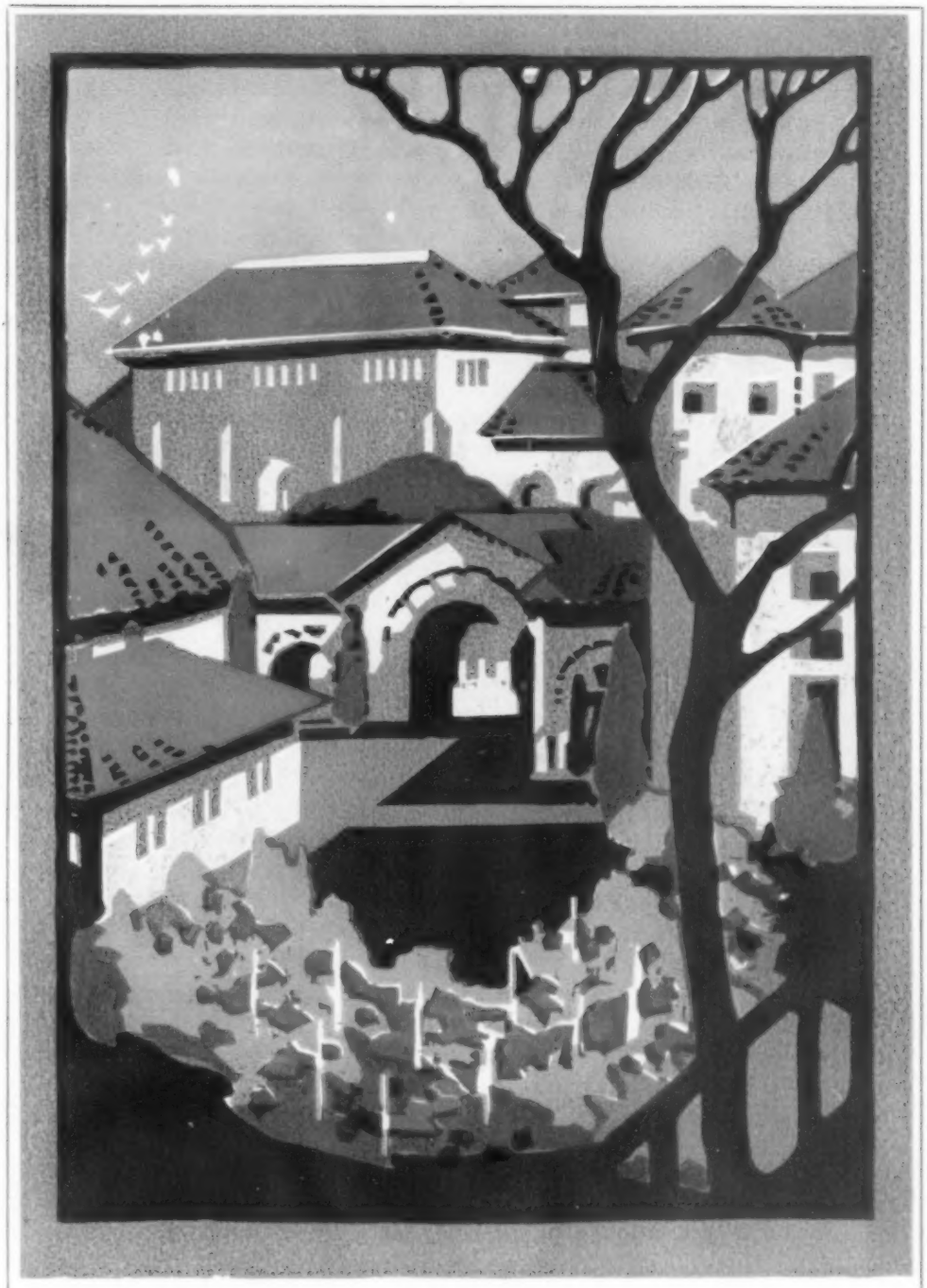


TOP ROW, THE HALFTONE MADE FROM A CRAYON AND WASH DRAWING AND THE YELLOW WOOD BLOCK. BELOW, THE RED AND BLUE WOOD BLOCKS. THE THREE WOOD BLOCKS WHEN USED WITH PROPER COLORS AND COMBINED WITH THE HALFTONE PRODUCED THE PRINT ON THE OPPOSITE PAGE



EUCALYPTUS TREES

A DECORATIVE TREE SUBJECT PRINTED WITH ONE HALFTONE AND THREE WOOD BLOCKS AS DESCRIBED IN A FOLLOWING ARTICLE. THIS METHOD PRODUCES INEXPENSIVE COLOR ENGRAVINGS



STANFORD ROOFS

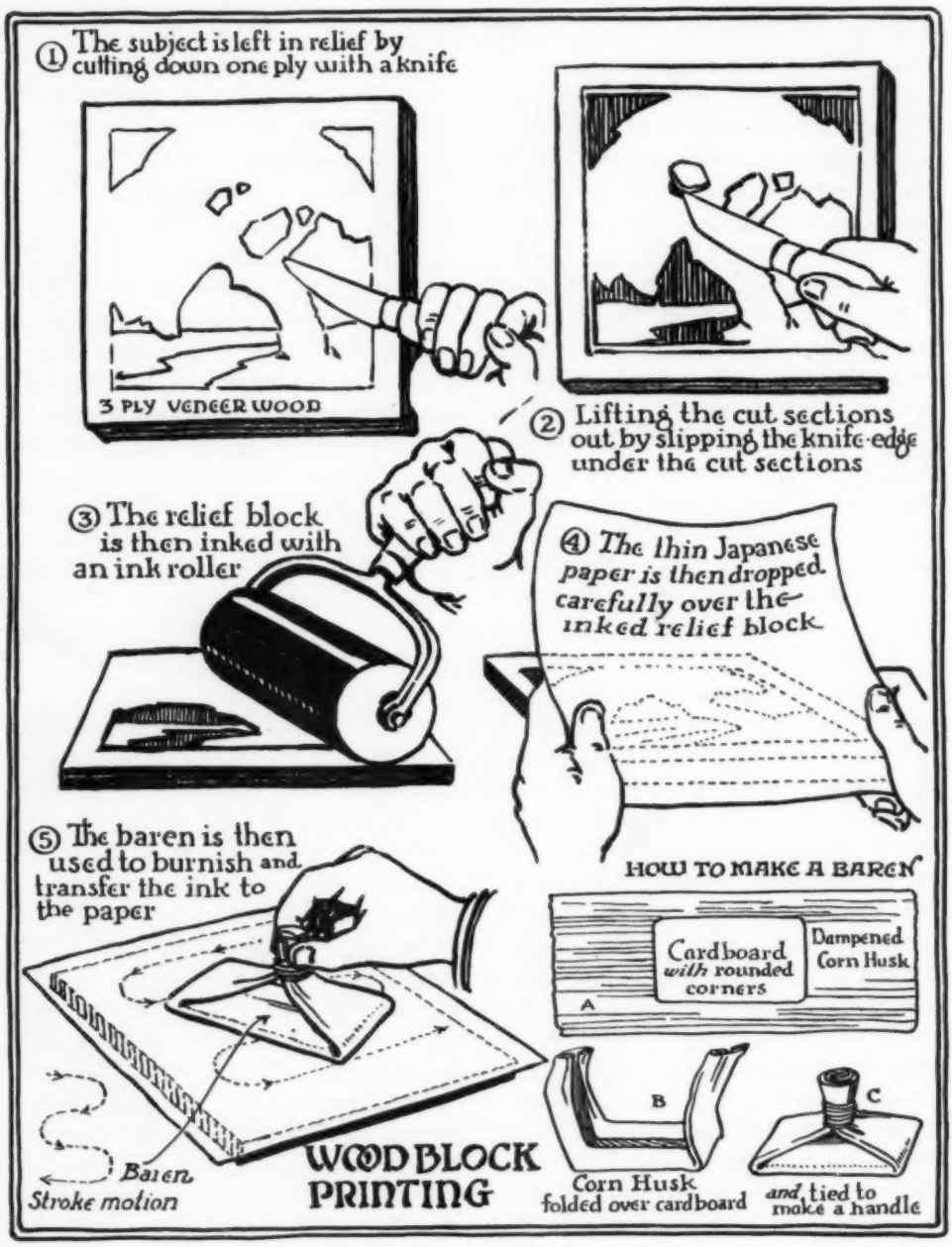
A WOODBLOCK SUBJECT PRINTED FROM HAND CUT WOODBLOCKS. THE BLOCKS ARE CUT FROM TYPE-HIGH BASSWOOD SO THAT THE PRINTING CAN BE PRODUCED ON REGULAR PRINTING PRESSES

throw off the tight mechanical boundaries that every commercial house seemed to set as standards in producing illustrations. And in seeking artistic mediums with which to work many have been followers of the wood-block and also the use of linoleum. To those who are beginners in woodblock work it may be well to explain that the subject used is left in relief on the wood and that all other parts are cut away. As wood surfaces vary it is important that a wood with a short grain, fairly even surface be used and that the wood be not too hard to cut. There are really three steps in the producing of the block print, and these steps, the drawing, the cutting and the printing will be described separately.

The Drawing: The subject should be planned in strong masses if to be a single color and this holds good as a rule if colors are to be produced with several blocks. A good method is to draw the subject in soft pencil on a thin sheet of paper planning all the parts carefully. Another way is to make a clear drawing with a brush dipped in ink on Japanese tracing paper. The pencil drawing can be transferred to the wood block by turning it face downward and burnishing it onto the block by rubbing it with a smooth hard surface, such as a burnisher or a teaspoon. This causes a good transfer to appear, particularly if the wood is light in color such as basswood or maple. If the ink drawing is used, the Japanese manner can be employed of gluing the paper down carefully face downward which causes the paper to become a part of the block, leaving the image to be cut in relief quite clear. It is understood that the image always appears in reverse relation on the block so that its contact with the paper in the printing will result in correct position. This should always be borne in mind when planning any lettering so that the finished result will not be lettering that appears backward.

The Cutting: The wood to be used should be a grain that will permit easy cutting and that has a perfectly flat surface. If the wood is slightly warped so that the surface is either concave or convex, the printer will become excited and all your trouble will be spoiled at the printing point. It is very important too, whether the block is to be used on a press alone or with other matter such as type and engravings, that the block be exactly type high which equals $\frac{15}{16}$ of an inch. Sheets of basswood, maple and other woods used for cutting billboard blocks can be secured from engraving supply houses that can be used for this purpose.

After the design has been transferred, the next thing to consider is the cutting implement. The Japanese block cutter uses a simple knife, and many good blocks have been produced by American students with the ordinary sloyd knife. I know of one artist who makes clever knives out of discarded hack-saw blades, attaching them to wooden handles for the purpose. After the design has been made clear in outline, the knife is used to cut downward along the outline in a slanting position so that each relief portion or line will have a tapering foundation of wood. This is essential in order to give strength to each portion as the weight of the press in the printing operation is considerable and may crush down any weak lines. The small spaces of wood between the lines may be cut away in shallow layers, but the


① The subject is left in relief by cutting down one ply with a knife
3 PLY VENEER WOOD
② Lifting the cut sections out by slipping the knife-edge under the cut sections
③ The relief block is then inked with an ink roller
④ The thin Japanese paper is then dropped carefully over the inked relief block
⑤ The baren is then used to burnish and transfer the ink to the paper
Baren
Stroke motion
WOOD BLOCK PRINTING
HOW TO MAKE A BAREN
Cardboard with rounded corners
Dampened Corn Husk
A
B
C
Corn Husk folded over cardboard
and tied to make a handle

THREE-PLY VENEER WOOD SIMPLIFIES THE CUTTING OF WOOD BLOCKS. A BAREN, SIMPLY MADE, IS USED FOR PRODUCING THE PRINT, AFTER THE RELIEF SUBJECT HAS BEEN CUT.

larger areas must be cut away more deeply. This is to avoid the ink rollers touching bottom and ink smuts printing where they become blemishes.

Some workers use carving tools, using a V-shaped cutting edge for outlining and a U-shaped gouge for removing the wood in between. The best way to determine the method most adaptable to the individual is for the individual to try both and find out. To those who are not handy with a knife, the battleship linoleum glued to a block and then cut with a knife will solve the difficulties. A good many exhibitors of block prints, after all, produce their subjects entirely with linoleum. In order to simplify matters still further, I experimented with the use of three-ply veneered wood such as is used for interior paneling and with its first use at a summer school obtained good results. It has since been used successfully in several directions. An accompanying page shows how to use it, and the cutting is simple in that as each layer is cut, it can be flipped out with a slight prying of the knife. This really reduces block printing and the retaining of wood grain qualities in a most simple way.

If these blocks are to be used in school annual work, or printed on a press, they should be nailed or attached firmly to another block to bring it up to type-high measurement. Often a thin coating of shellac will prevent a soft block from over-absorbing the printing ink.

Printing: If the printing is to be done on a press, the matter is simply accomplished by locking it in the form and printing from it the same as any other relief plate. If colors are to be secured, the different colors should be cut in separate blocks so as to register correctly or print in correct position one with another. This is done by printing the first block cut which is generally termed the "key block" and then "offsetting" or transferring this print to other blocks by rubbing or burnishing the freshly printed proof or print onto the surface. This offsetted print supplies a guide so that the other colors can be located and cut so that the color results will be correct in position.

The most ingenious way of securing a print without a printing press is to use the Japanese baren method which is illustrated in the working plate. The Japanese use the shield or leaf that sprouts from the ground around a new bamboo shoot, but I have found a regularly ribbed corn husk to be very good, for bamboos do not grow everywhere.

Another good substitute for printing is the old letter-press. The inking of the block can be done with a printer's ink roller and printer's ink or oil paints can be used thinned with turpentine or kerosene until the roller picks the ink up in thin, even layers. The inked block is carefully covered with the paper and a half-inch layer of newspapers added to this will result in a good print if put in the letter-press and the wheel turned until a good pressure is obtained.

The clothes wringer can be used with the thin wood blocks or linoleum unmounted. A soft flannel over the paper will insure good contact as the material goes through the rollers. Such prints as described by these last methods can be used as inserts or "tip-ons" in school annuals or booklets. The woodblock is playing an important part as can be judged from the block prints shown in this number of the MAGAZINE, and in ad-

dition is bound to play a very important part in the finest forms of American printing in the near future.

As an auxiliary to other engravings it can be used for producing colors in conjunction with halftone engravings and one of the color pages shows such use. Where the cost of color engravings make such luxuries impossible for the usual school paper a little planning with the drawing will enable the printer to secure with a few extra tint runs with woodblocks some very pleasing results. Or where there is a school press or printing department the art department can easily plan a little poster page of some interesting scene expressed in simple flat color masses such as is shown in the color print "Stanford Roofs" and with a careful matching of printing inks (with possible lapping of some colors to secure extra tints with the least number of printings) surprisingly good results will be secured.

The art of printing, or any craft requiring the search for beauty, has many fine valuable influences for the student other than merely its art training. In fact, that is the value of all Art handicrafts, that there are subtle benefits that almost unknowingly attach themselves to all those who seek beauty through their medium. Educators are gradually awakening to the realization that the arts are not to be considered merely aesthetically or commercially, but that every character is builded more nobly and broadly where they have added art in its bigger sense to their other accomplishments.

The School Annual is an important function in every school life and the principles of fine printing and book construction should not be missed in the curriculum of any truly American school.

THINK WHAT BOOKS HAVE DONE FOR LIBERTY! IN OLD DAYS OF THE STRUGGLE FOR FREEDOM MANY A GRAND SPEECH MIGHT DIE AWAY WITHIN THE WALLS WHERE IT WAS UTTERED; NOW BY THE AID OF THE PRINTING PRESS, REVERBERATED THROUGH ALL THE NATIONS, IT MAY GO THRILLING AND THRILLING THROUGH THE WORLD, AND COME ROLLING BACK TO THE SPEAKER IN MILLIONS OF ECHOES. THE SPOKEN WORD MAY REACH TWO OR THREE THOUSAND; THE PRINTED PAGE MAY BE READ BY THREE HUNDRED MILLION OF MEN AND WOMEN.—*Dean Farrar.*

Block Color Printing

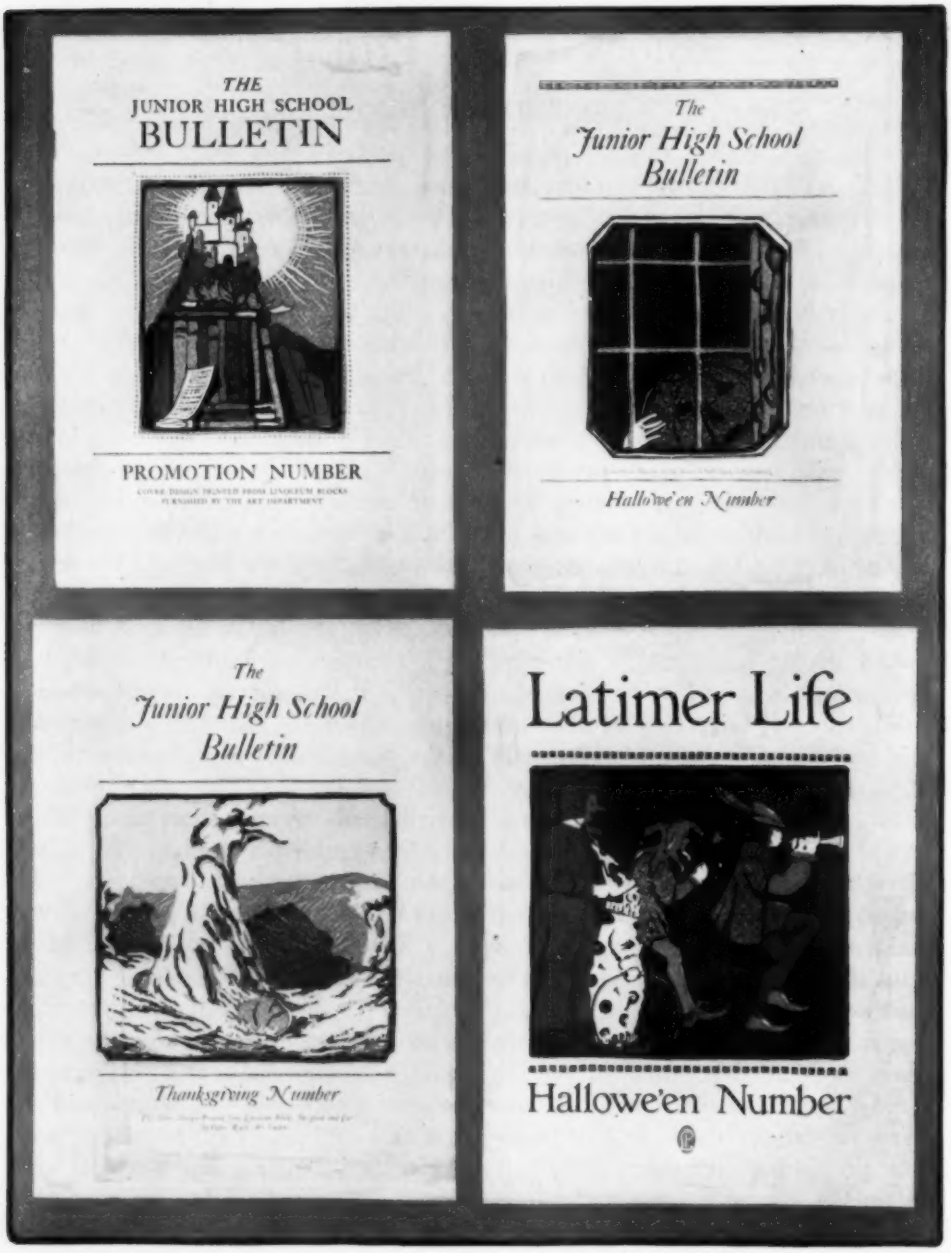
DONALD R. DOHNER

THE AVERAGE art student has such meagre knowledge of printing in its many forms and of the methods of reproduction that it is impossible to expect him to comprehend many of the technical details of block-printing without a demonstration of the medium and the materials used.

The student is first given a set of blocks with progressive proofs to examine. These blocks are then printed again before him by the instructor or an older student and in this way he soon grasps the principle of relief-printing. He sees at a glance that what is not marked is cut away: why the high areas print. He watches the inks being mixed, notes how the blocks are registered and if he is observing, will detect that probably from form to siren colors have been obtained from only three blocks.

By this time he is all interest. One student wants to know if the colored comics are made that way; another states that she never dreamed it was so much work to put all the drawings in the magazines; still another says,"Gee! the fellow who cut that Maxfield Parrish calendar was good." Since it is necessary to connect these first suppositions, time is taken at the start to fully explain the various processes of photo-engraving and color printing and contrast this hand work with the machine made product. While the student is being told something of relief printing it is well to inform him about intaglio and surface printing, the types of presses and pressure required, and the characteristic qualities of the different proofs.

After the student is fairly familiar with the process, the problem of design is presented. The subject of the design is first considered. Use something simple, for instance a monogram in one color. The design may be approached from two standpoints, either the monogram is black on a white background or vice versa. In the first case the design will be cut in relief and the background cut away, and in the second the design will be cut in, leaving the background in relief. It will not take long to execute such a design and the student will gain considerable experience with the tools and in case a mistake is made, it can be made over in a short time. When the first problem is finished, one a little more complex may be attempted. This may be a poster stamp, a program cover, a Christmas card, etc., and should be limited to two blocks, a middle gray and black. It may be designed by starting with gray stock and painting in the whites (this is consistent with the medium for afterwards the whites will be cut away with the tool) or starting with white and building up the gray and black. The design must be consistent with the medium, consequently it must be simple and definite. If there are many areas, provision can be made for the lapping of several blocks and an interesting effect is obtained by cutting



HIGH SCHOOL BULLETINS WITH BLOCK PRINTED COVER DESIGNS PRODUCED BY THE STUDENTS OF THE SCHOOLS OF PITTSBURGH, UNDER THE SUPERVISION OF DONALD R. DOHNER

away parts of one block allowing the other to show through. This must be planned when making the color scheme.

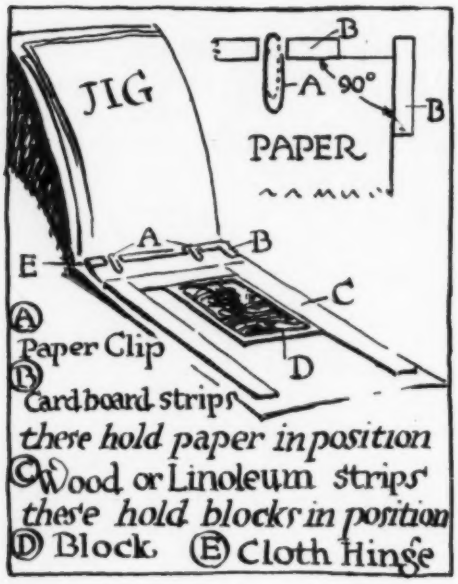
When the design is drawn in and completely colored, the key-block is chosen and very carefully traced. The key-block is the one containing most of the design. It may be a black block, often a color block, in which case, it must not be forgotten that it may extend under other colors and should be included in those spaces.

The key-block is now traced onto the block. If there is any lettering or the design is such that it can not be printed backwards, the tracing must be reversed on the block. If the wood is dark or linoleum is used, it should be coated with white tempera to take the tracing. The coat of white tempera should be thin or it will crack off later in the cutting. The upper right corner of the key-block and each succeeding block should be square to insure proper register. Any close grained wood will do but the hardwoods such as cherry and maple are best, especially for line cutting. If linoleum is used the one-fourth inch Battleship linoleum is best. This must be mounted on wood approximately eleven-sixteenths of an inch thick to make it type high if it is to be printed on the press.

This brings the student to the cutting. A small gouge about one-thirty-second to one-sixteenth of an inch, according to the design, should be used. After cutting around the areas to be printed, a larger tool with a broader sweep may be employed for routing. Large areas to be cut away must be cut deeper. When the block is completely routed a proof is taken to see the condition of the block. Sometimes it is necessary to take many proofs before the key-block is entirely satisfactory.

To take a proof, a pallette of glass, a brayer (a printer's roller), pallette knife, printing inks, a printing jig and press are necessary. These materials may be gotten at any printers' supply house with the exception of the jig which is easily made. An ordinary letter press or clothes wringer will do very nicely for a press. The printing jig is made by taking two thin but firm pieces of cardboard about nine to ten inches wide by twelve to fourteen inches long and glueing the narrow ends together with a piece of cloth to fold like a book. The one piece of carboard will serve as a bed for the block, the other folds over as a cover. On the lower board glue three strips of the same material as is used for the blocks. These strips are to hold the blocks in position and must be the same thickness as the block if a wringer or etching press is used. If a downward pressure such as is obtained by a letter press or Washington hand press is used, the strips should be thinner than the blocks. The strips need not be over an inch wide. The upper right corner should be perfectly square so the blocks will fit snugly. A piece of bristol board with several narrow strips of heavier cardboard will hold the paper in position. Several sheets of paper should be placed between the print and cover of the jig.

The proof is taken by rolling out a thin film of ink on the pallette and distributing this on the block. The block is placed tightly against the strips, a piece of paper inserted under the clips against the carboard strips, a few extra sheets of paper added, cover lowered and placed in the press.



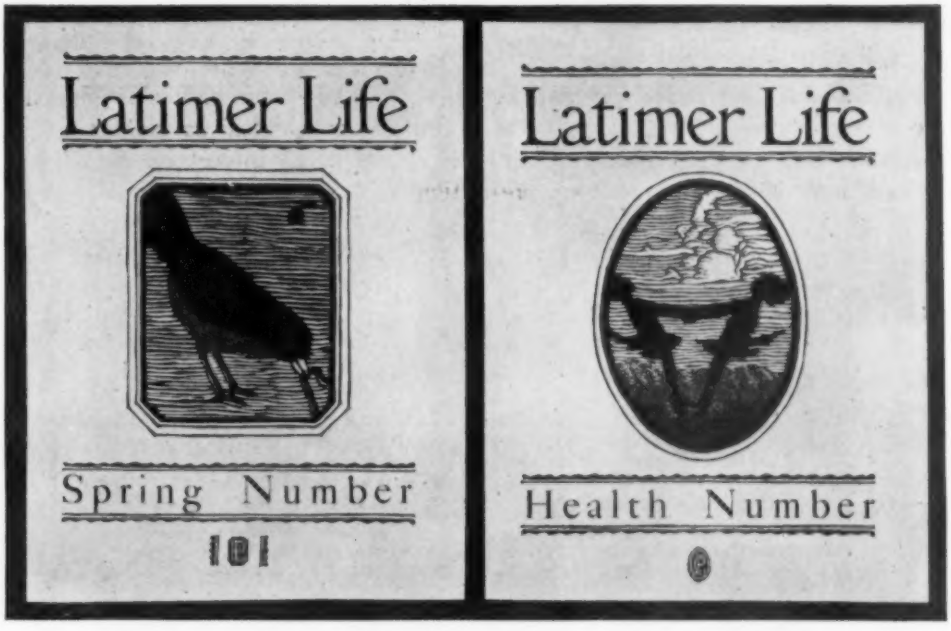
If the design calls for more than one color, additional blocks must be cut. This is done by printing the key-block onto a piece of hard paper and without removing the paper, take out the key-block and insert another clean block. Put the jig through the press and the impression of the key-block will be offset onto the new block. This gives the student an exact copy of his key-block on the new block—not a copy as traced, but as actually cut. To this offset is traced any one additional color. The process is repeated for additional color blocks.

The blocks are now ready for a color proof. Good printing inks are highly concentrated and great care must be taken to avoid waste. Most students get the hues too low in value and too chromatic. This can be corrected by starting with white and adding small quantities of the desired color. The amount of ink on the pallette, the condition of the brayer, the amount of impression and the texture of the paper all must be taken into consideration if good work is to result. The ink can be mixed with a pallette knife and placed in a pile at one side. A very thin film of ink should be transferred to the block.

It matters little how good the design or how beautiful the color if the blocks are out of register. This is due either to poor cutting, poor offsetting or careless printing. The students should be very careful to see that the blocks are placed firmly against the strips and not jarred out of position in placing the jig in the press. The same care applies to the handling of the paper as the same piece must be placed in the jig as many times as there are blocks to be printed.

A few words might be said about the care of the tools and materials. It is essential to have a bottle of gasoline and waste to clean the blocks, pallette, and brayer. Each should be cleaned immediately after using, especially the brayer. The brayer is made of a special composition and should stand on two little iron legs to keep it from contact with anything as it is soft and is easily drawn out of shape. It must be kept out of the sunlight and away from heat and is not to be cleaned with water. When not in use for a long time, it should be covered with oil. A large tin can with a lid is necessary to keep the oily waste in to prevent a possible fire by spontaneous combustion. The tools must be kept sharp. The wood or linoleum must not be torn but cut away so the tools will have to be ground occasionally and whetted with a small slip stone.

The great value of block-printing in the schools lies in the fine opportunity to correlate with other departments,



COVER DESIGNS PRODUCED FROM BLOCKS DESIGNED AND CUT BY HIGH SCHOOL PUPILS ARE BECOMING A PROMINENT PART OF SCHOOL ART ACTIVITIES

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more especially the printing department if there happens to be one in the school. The print-shop students get a knowledge of design and color-printing that they could obtain in no other way in a school shop. For the students who do not have the opportunity to correlate with the print-shop, a greater interest is awakened in the possibilities of printing and advertising. In addition they become acquainted with the line print and its decorative qualities for the interior arrangement. In fact a greater interest is taken in all the graphic arts. Block-printing will strengthen the students in design and color. They learn that their design must be purged of the hundred and one unimportant and meaningless tones and gradations so possible in other mediums. The design must be consistent with the medium. It must be simple and definite. Our present lack of mental discipline is such that it renders this excessively distasteful to the so-called artistic temperament. The medium is therefore one of the finest correctives of this unpleasant disease. It is a mistake to suppose that precision in actual work prevents emotional expression. It is becoming clearer and clearer to all liberal-minded artists that it is not an absence of precision or so called looseness that counts but a quality of line and color values. The student soon discovers he cannot think in terms of elaborate, indefinite and incongruous designs. If he learns no more, he has learned much. The possibilities of color in block-printing are unlimited. It gives the student a good incentive to experiment, for once he has a set of blocks cut, he may vary his hues, values, and chromes and get many altogether new and interesting results. His best efforts need not be limited to one as in other problems in design but he can make as many as he cares to. It is possible with only an old letter press or wringer to print many greeting cards, postcards, place-cards, book-plates, poster stamps, etc. Thus the student's interest is kept at a producing point and he carries his design and color problems through to a logical conclusion which is of no small importance in education.

"HE WHO FIRST SHORTENED THE LABOR OF COPYISTS BY THE DEVICE OF MOVABLE TYPES WAS DISBANDING LINED ARMIES AND CASHIERING MOST KINGS AND SENATES AND CREATING A WHOLE NEW DEMOCRATIC WORLD; HE HAD INVENTED THE ART OF PRINTING"—*Carlyle.*

A CHRISTMAS DESIGN CUT IN WOOD BY THE STUDENTS OF DONALD R. DOHNER AND PRINTED IN THREE COLORS. THE LATIMER LIFE AND HIGH SCHOOL BULLETIN ISSUED BY THE PITTSBURGH SCHOOLS FEATURE EXCELLENT WOOD BLOCK COVER DESIGNS

Patchwork Posters

DOROTHY G. RICE

THERE is no occasion for discipline where pupils are occupied, and there are no idle hands or brains if work is interesting.

Penelope Stone was not merely a teacher, she was a personal friend of her pupils, an older friend who was alive to their interests and capable of developing those interests.

Naturally, she was a favorite, and although drawing was not a required subject, wherever his or her course of study would permit it, every boy and girl in the High School found a little time to spend in the Studio.

On various excursions with these pupils, Penelope had noticed how keen was the interest of the boys in passing automobiles, how they knew them all by name, and each distinctive characteristic. The girls, too, argued in favor of this or that make of automobile.

"My father has sold his old machine and is going to buy a 'Franklin.' He says I may learn to drive it," or "I rode in a 'Pierce Arrow' once," or "Our neighbors have a 'Packard' and motored through the mountains last summer."

Aware of this interest and feeling that landscape composition and lettering were subjects that needed development, Penelope Stone announced to her pupils one day that they might go into the advertising business.

"We will advertise Automobiles," she said. A wave of interest passed over the class. Classes in drawing generally expected Penelope to provide topics of interest.

"Search the magazines and newspapers for material. Provide yourselves with pictures of automobiles, being particular to preserve the name of the car in the type used, for that is a form of trademark and must appear in that advertisement."

The pupils were more prompt than usual in bringing in material and the work was started immediately and with much earnestness.

Penelope gave these directions: "The entering class may cut out the picture of the car and use it as a part o the advertisement, devoting all energy to drawing the surrounding landscape and lettering, for that is the problem, to combine a suitable landscape with good lettering, advertising some automobile.

"Second year pupils may do the same, but they may introduce one color.

"Third year pupils may draw the automobile, but it must be accurate, and enlarged by means of squares. The problem is to be carried out in black and white.

"Pupils of the fourth year have for their problem the drawing of the automobile, in a changed position if possible and may use full color."

The room was hung with a collection of posters, and advertisements cut from magazines as well as landscapes in oil and water color, products of Penelope's past summer's sketching tours. These

PATCHWORK POSTERS ALLOW FOR A GOOD COMPOSITION TRAINING AND SIMPLIFIES THE POSTER PROBLEM FOR SHORT CLASS PERIODS

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served as nutriment for aenemic imaginations.

The pupils know where to find further nourishment, for Penelope was unlike Mother Hubbard,—her cupboard was far from bare.

Some of the pupils were ready with definite ideas, but needed material with which to illustrate them.

James and Norman were searching the box of unmounted illustrations for a particular boat one of them had contributed to the collection, wishing to show thereby a comparison of sports. Several others were turning the mounted illustrations in the Alphabeticon, while a few were roughly sketching their plans on paper.

"Miss Stone, where will I find a good pine tree?"

"In the 'Tree Number' (April 1920) of THE SCHOOL ARTS MAGAZINE, or look under tree in the card catalogue."

"Miss Stone, will you please tell me how I can work out this idea: My picture car is going up hill, and it reminds me of a trip we took over the Mohawk Trail. It was a very hot day and when we arrived at the top of the mountain, the surrounding hills were blurred by a blue haze, flattening them out like a poster. How could I show that in black and white?"

"You might try charcoal paper and crayon with a rubbed effect in the background, picking out the foreground with pen and ink."

"Try it, I think it would be effective."

Penelope Stone passed from one pupil to another giving them encouragement here and criticism there. Now and then she gave a suggestion to the pupils collectively. "You know, Class, that a poster should attract attention. As some one has said, 'A poster should slap you in the face.' It should either attract attention by its beauty or startle by its originality. In either case, arrangement of color or contrast of black and white are the first to attract the attention.

"If your design is not clear, if the printing is involved, no one will take the trouble to puzzle out the meaning of your poster.

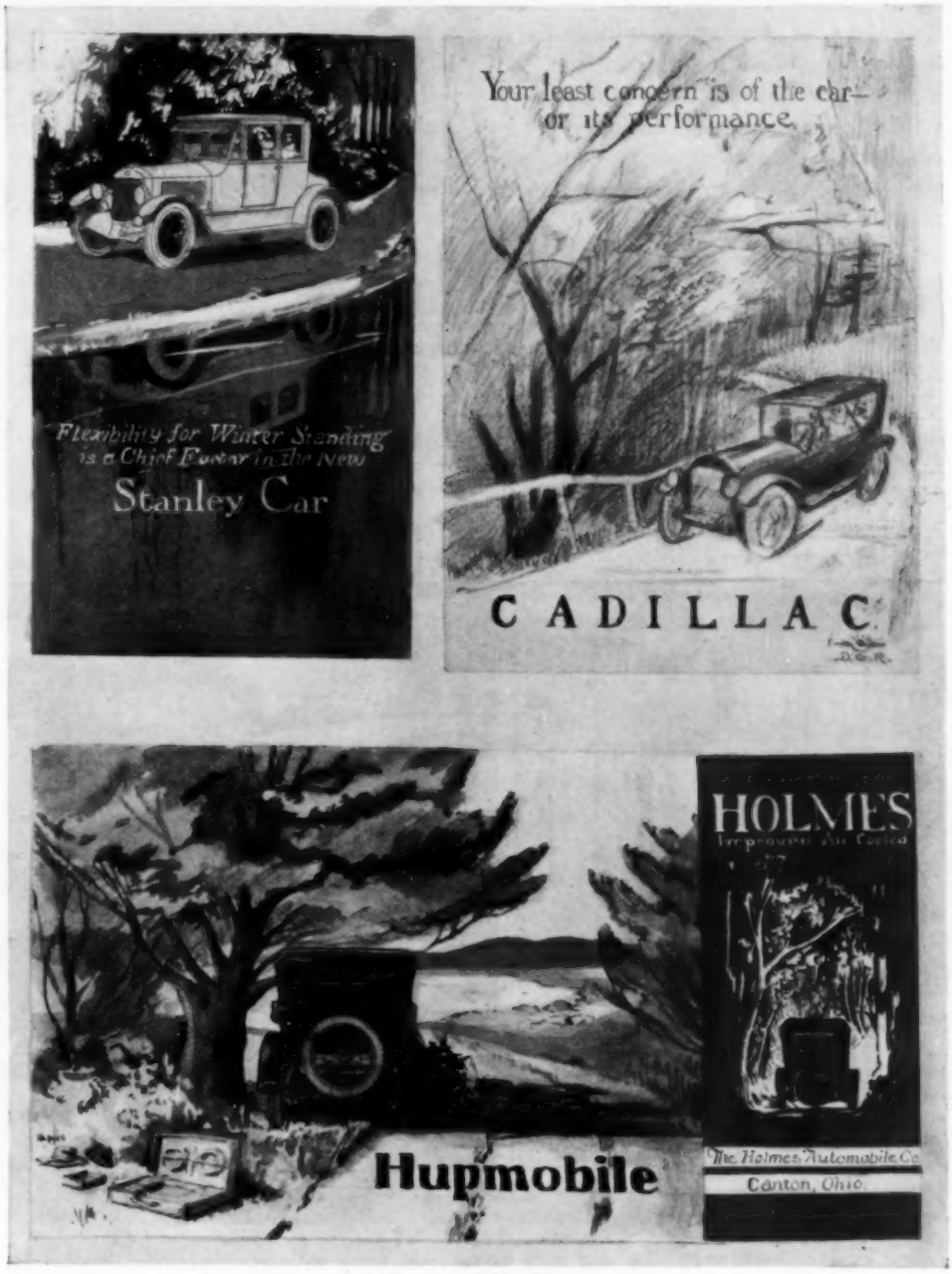
"Good clear printing is absolutely essential. Good printing will help a poor drawing but poor printing will ruin the best drawing you can produce.

"I saw in a store window today, a printed poster advertising a college play. The drawing was very fair, but the title of the play was done in Old English letters and all capitals. Suppose I should write my name Capital S, Capital T, O, N, E, it would look absurd, but the intricate Old English letters looked even more ridiculous.

"Be careful, Walter, you have two l's together in that word!

"I remember an expert in the art of lettering once called my attention to the 'hole' made by such a double letter. Try shortening the horizontal lines of the letter, do you see that the spacing is better now? There is such a pretty rhythm about lettering if you look for it, so many of the lines are repeated in successive letters. It is noticeable especially in Hebrew and Arabic.

"The old Moors perfectly understood the decorative value of lettering and employed it again and again. Just notice when you pass them, the photographs of the Alhambra hanging in the corridor. The inscriptions from the Koran are like little strains of melody in a musical composition.



PATCHWORK POSTERS AS A SCHOOL PROBLEM IN POSTER WORK IS EXPLAINED BY MISS RICE IN THE ACCOMPANYING ARTICLE

"Keep your masses of dark and light unbroken as far as possible. Large masses show better at a distance.

"Observe your picture car and locate your horizon line accordingly. You can do this by continuing two converging lines in the picture until they meet which will of course be upon the level of the horizon.

"Sometimes professional advertisers will pay for ideas when the actual drawing is not acceptable. Just do the best you can and the result will justify your effort."

"TEACHING IS NOT A FLOW OF WORDS, NOR THE DRAWING OF AN HOURGLASS, BUT AN EFFECTUAL PROCURING THAT A MAN KNOW SOMETHING WHICH HE KNEW NOT BEFORE, OR TO KNOW IT BETTER."—*South.*

POSTAL CARD DESIGNS DRAWN BY STUDENTS OF THE BAY RIDGE HIGH SCHOOL, BROOKLYN, N. Y., FROM THEIR SCHOOL ENTRANCE. FOUR SUBJECTS WERE PRINTED AND COLORED AND OVER TWO THOUSAND CARDS WERE SOLD, THE PROCEEDS GOING TOWARD SCHOLARSHIPS AND THE BUYING OF INTERESTING DRAWING MODELS. MAUDE S. ISLES, TEACHER

That Awkward Letter "S"

H. S. RANKIN

THERE is Biblical authority for the belief that the Evil One in the guise of a serpent was the prime cause of all the troubles that have afflicted mankind. And in the lettering lesson, children still feel the primeval curse so laid on us all, for does not our alphabet contain a letter whose shape is based on the sinuous form of that creature, and does it not cause nearly as much trouble to draw as all the rest of the letters put together? I sometimes suspect that children dumbly feel that its introduction into the otherwise pleasant garden of lettering is almost as provocative of trouble and effort as was the entry of its prototype into the Garden of Eden.

What is still more unfortunate (from the same point of view) the sibillant sound it represents is widely used in the English language and consequently there is a frequent recurrence of the difficulty. The serpent still remains in evidence! For how many otherwise excellent examples of lettering are spoiled by a faulty rendering of that "awkward letter S." It is a veritable "fly in the ointment," (if I may say so without unduly mixing the metaphors).

But like many other difficulties, when seriously tackled its artistic representation becomes a matter of comparative ease, or at least a comprehension is given that materially lessens the trouble of drawing it.

The writer, after long practical experience, "gilds his pill" in the following manner, and to those teachers who perforce have to do what they can with the pencil (in lieu of the broad pen) a knowledge of his procedure may be welcome, involving as it does:

1. A difficulty common to all forms of printing, viz., the making of the letter S.
2. Precision in the use of the pencil.
3. A good exercise in flowing curves.
4. The choice of a suitable background.
5. The choice of a suitable color.

And withal there is something tangible for the teacher to criticise and that in such a form that the children can easily understand it (I know the latter statement is hopelessly old-fashioned but surely there is something in the "wisdom of the ancients").

Drawing HB pencil, ruler and rubber required. Four types of the letter S are chosen:

The basic form (as in the Trajan column where the letter is based on two circles).

An ordinary form (based on ovals).

An elongated form (based on ovals).

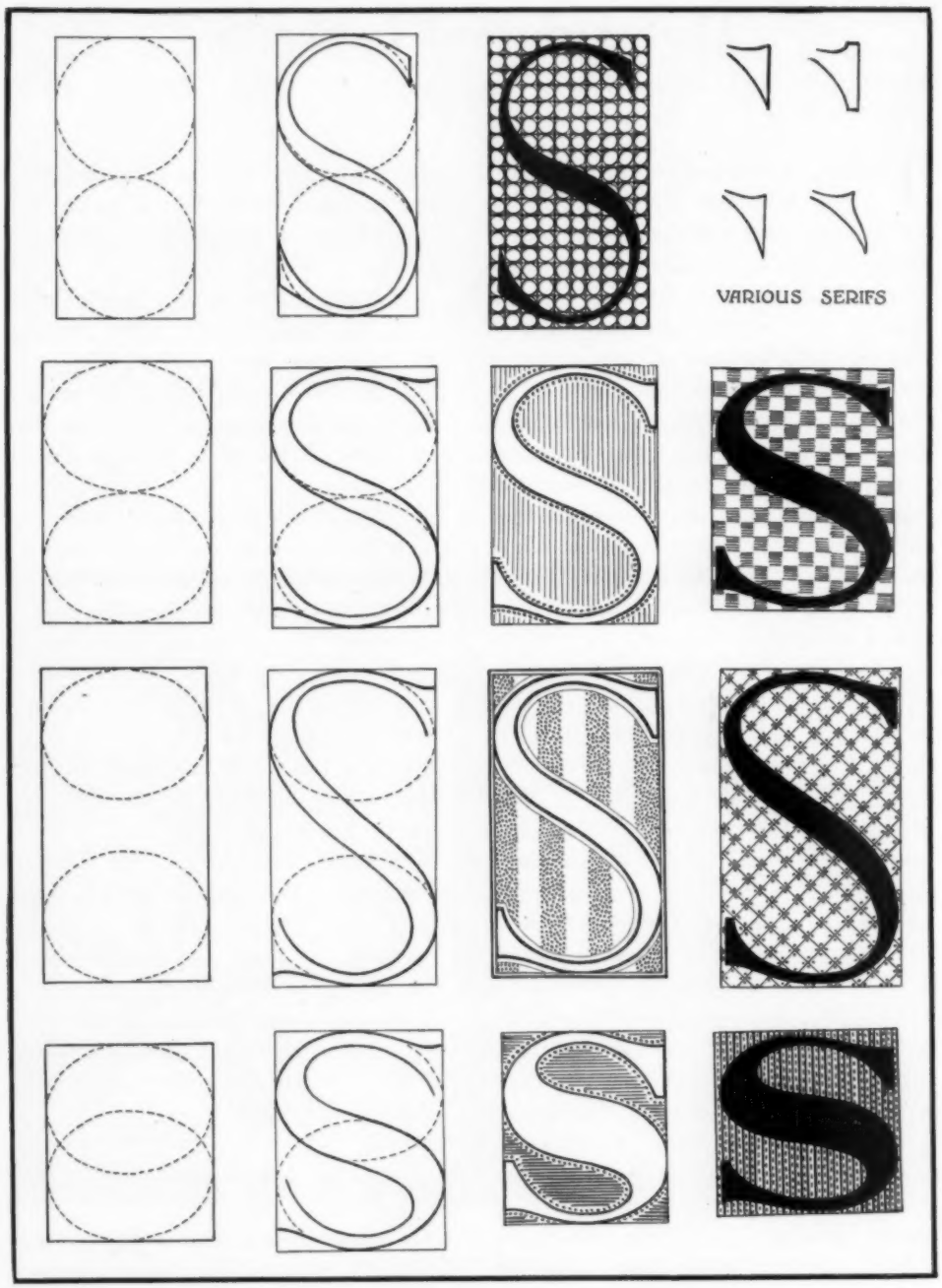
The squat form (based on ovals).

Four rectangles are first drawn using the ruler. Their proportions are:

Fig. 1. a. 2:1
Fig. 2. b. 5:8
Fig. 3. c. 2:1
Fig. 4. d. 6:5

The teacher can choose the actual dimensions to suit the page or paper on which the children are working.

The circles or ovals are then drawn



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freehand as in the illustrations, Figs. 1, 2, 3 and 4. Each pair of circles or ovals are then united to form the groundwork of the actual letter. The serifs are then added. The block form of serif is here chosen but children may have a choice given them. Two or three forms of serifs may be drawn by the teacher on the blackboard, such as Fig 1d.

The curves of the letters are then polished into precision and the guiding ovals rubbed out.

It may here be remarked that the top oval in each rectangle should be slightly smaller than the lower one as the letter S usually *looks* top heavy if the two are exactly similar. Moreover, the letter appears to stand more securely if the base is larger, for the aesthetic center of a rectangle is slightly above the mathematical center.

Choice of a background. Children may design their own backgrounds or they may be suggested by the teacher. Enough suggestions should be presented to children to allow for individual taste to operate. Taste in all matters of this kind is only exercised by actual choice so let the children *choose* their own background if they cannot invent one; and many in the limited time of a lesson cannot do so. Figs. C and D show some simple backgrounds, none of which are too difficult even for little children. If time allows, a simple border may be added. Simplicity and good arrangement must be the keynote. The question of scale should likewise be left to the children.

Choice of Color. A separate lesson may be taken for the coloring. Water color is naturally more suited for the purpose than pastel, though the latter may be used. A little talk on the matter will greatly help. What is the function of a letter? Contrasts of color such as red and green, blue and dull yellow, purple and green are the most suitable. Where strong contrasts of color are not used, there should be a strong contrast of tone or value; that is, one should be fairly light in comparison with the other. It is not wise to encourage too many colors. Encourage, however, as many shades of one color as desired. With too many colors a garish effect is produced, whereas many shades of one hue give richness of effect.

"IN BOOKS LIES THE SOUL OF THE WHOLE PAST TIME; THE ARTICULATE VOICE OF THE PAST, WHEN THE BODY AND MATERIAL SUBSTANCE OF IT HAS ALTOGETHER VANISHED LIKE A DREAM."
—*Carlyle.*

Teaching the Art of Typography

ROBERT F. SALADE

IN EVERY instance where a beautiful building is to be erected, the original design for the structure must first be born in the mind of an artist. The classic cathedrals of the Old World would not have been possible without plans drawn by great architects. So is it with all the magnificient structures of modern times. Original designs and plans were absolutely necessary before these buildings could have been put up.

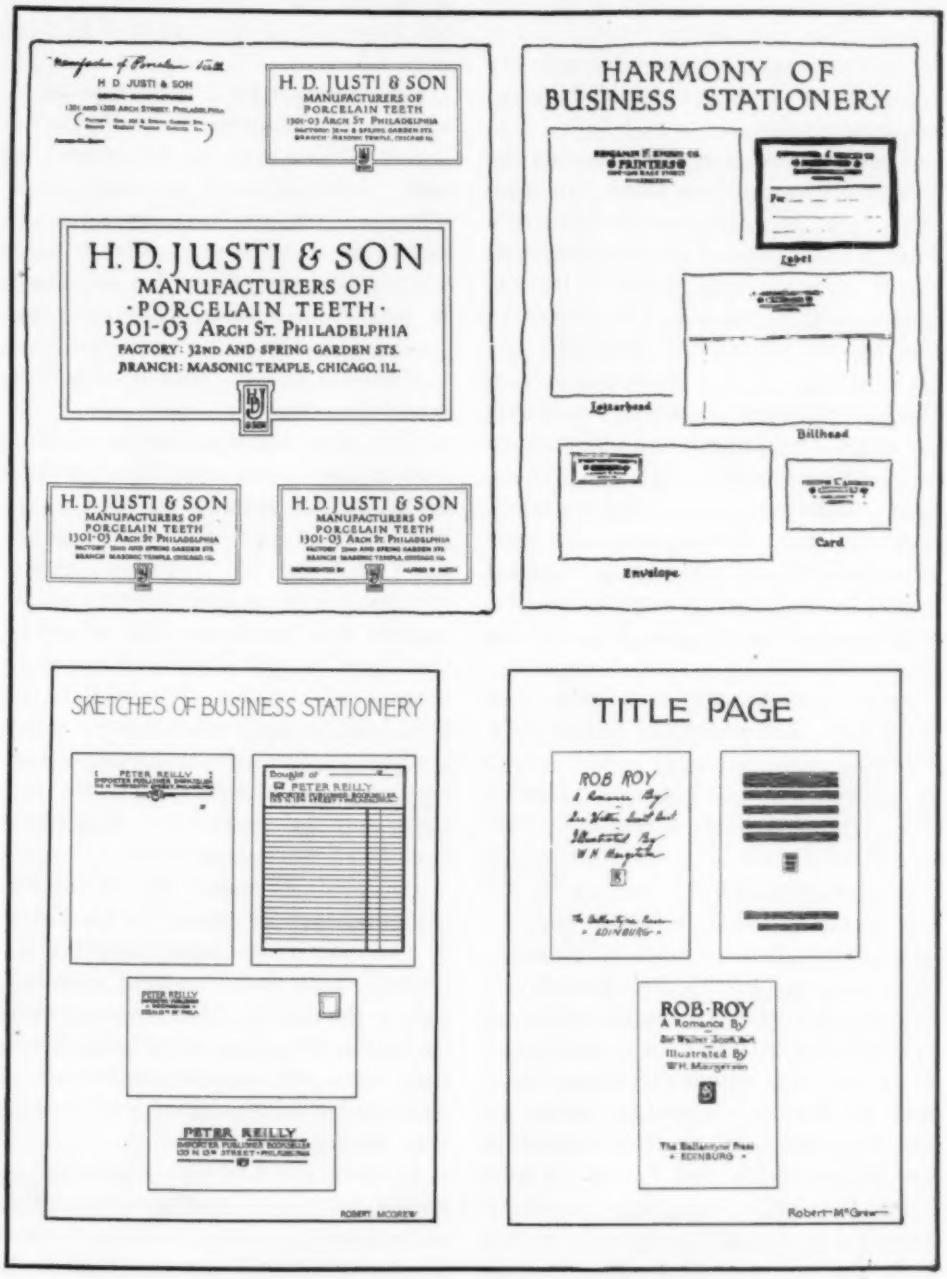
It is a comparatively easy matter to engage the services of stonemasons, carpenters, bricklayers and other building-trades men. These artisans are capable of erecting beautiful buildings of all kinds, but only in cases where they have definite plans to follow. You may hire a number of these men and ask them to put up a beautiful house; you may furnish them with all the essential building materials; but unless you also furnish them with architectural plans for the structure, they will not be in a position to proceed with the work.

The beautiful books which were produced by the early master printers were not made by mere chance. The designs for these books were first born in the minds of those artist-typographers. The same is true of all the beautiful printed matter that is being produced today—the original designs are planned by artists, and after the designs have been prepared, the mechanical work is comparatively simple.

Wonderful progress in the art of printing has been made during the last few decades, but much yet remains to be accomplished. The employing printers of these days should follow the example set by the master builders of practically all ages—the plan of having all work produced from designs orginated by artists. This plan, of course, has been adopted by a limited number of master printers, and is being applied to a limited amount of fine typographic printing, but there is no reason why the same plan cannot be applied to the major portion of all printed matter now being turned out.

The greater number of compositors and pressmen now employed in the printing industry are not artists, and they cannot be expected to originate designs for work that will compare with designs made by trained artists. Excellence in typographic printing can only be obtained by the application of the fundamental principles of art, and such knowledge is not in the possession of the average compositor or pressman. Beautiful forms of typography, correct color schemes, the proper use of decorative material can be planned only by craftsmen who have exact knowledge of such things.

The time is soon coming when every first-class printing concern will employ at least one artist-typographer who will prepare layouts for each important job of printing which is to be produced. Layouts of this kind will be prepared for all varieties of printed matter including books, magazines, advertising literature,



ARTISTIC PRINTING REQUIRES OBSERVANCE OF ART PRINCIPLES. SPACING AND FORM RELATIONS OF TYPE AND ORNAMENT MUST BE CAREFULLY CONSIDERED

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business stationery, and even plain jobs like circulars and factory forms. These layouts will make it possible for ordinary compositors to set up forms of the highest artistic value.

This is a good way of illustrating the splendid opportunities which are open right now for many compositors who have a knowledge of the fundamentals of art, and who may desire to become professional layout men. A number of well-known schools of industrial art have special courses in typographical design, and these courses are available for all printers, apprentices and students who may care to take advantage of them. Many of the vocational training schools, evening trades schools, etc., also have courses in the art of typography, and it would be well for printing apprentices in general to take up that study as soon as possible.

Some years ago Professor Otto Frederick Ege, then instructor in Industrial Drawing at the School of Industrial Art of the Pennsylvania Museum, Philadelphia, established a course in Typographical Design at that institution. Professor Ege, who is now with the Cleveland School of Art, had made an extensive study of lettering and illumination, both in America and abroad, and he had also made a valuable collection of rare printed books and "rubbings" of notable inscriptions on famous buildings in Europe. Therefore, when his venture was started it immediately proved successful, and it was not long before the class in typography was being attended by a large number of students, including several journeymen printers.

The best examples of the early typographic printers were studied at this course, and the principal intention was to analyze how those masters *thought*, not merely to learn what kind of work they did.

Among numerous important problems which were deeply studied were the following: Tone and its adjustment to area, tones adjusted to each other; color and the study of its attractive force, color harmony, correct color schemes, and the effect of color masses in type composition. Layouts were prepared by the students in the effort to show the proper use of color in typographic printing.

Early type faces, as well as those of modern times, were minutely studied for the purpose of choosing the correct type face for each piece of work. Professor Ege's collection of "rubbings" and of rare books were utilized to great advantage in this particular line of study. Questions like the legibility, appropriateness and beauty of type faces received the deepest consideration. Other studies included correct spacing of type matter, the right sizes of type for each form, and the combination of different type faces when permissible.

The study of paper and its texture, color and appropriateness for each piece of work was a prominent feature of the course. This study covered questions such as the right selection of paper stock for books, programs, advertising literature, etc., and the proper texture of paper to use in connection with various type faces.

Another branch of study that received special attention was the decorative element of typography. When decorative initial letters, borders, tail-pieces or ornaments were to be used with type composition of any variety, the idea was to have a close relationship between

the tone and design of the decorative material and the tone and design of the type face involved.

The practical work of the course included the practice of sketching layouts for typographic forms, hand lettering, making color schemes, and the actual designing of initial letters, borders and decorative pieces. This work was continued throughout the course. The layout sheets were completed in such a manner that when compositors in a regular printing office would receive them, they (the compositors) would know precisely what faces and sizes of type to use. Moreover, the layouts would show the compositors the exact arrangement of the type and decorative elements.

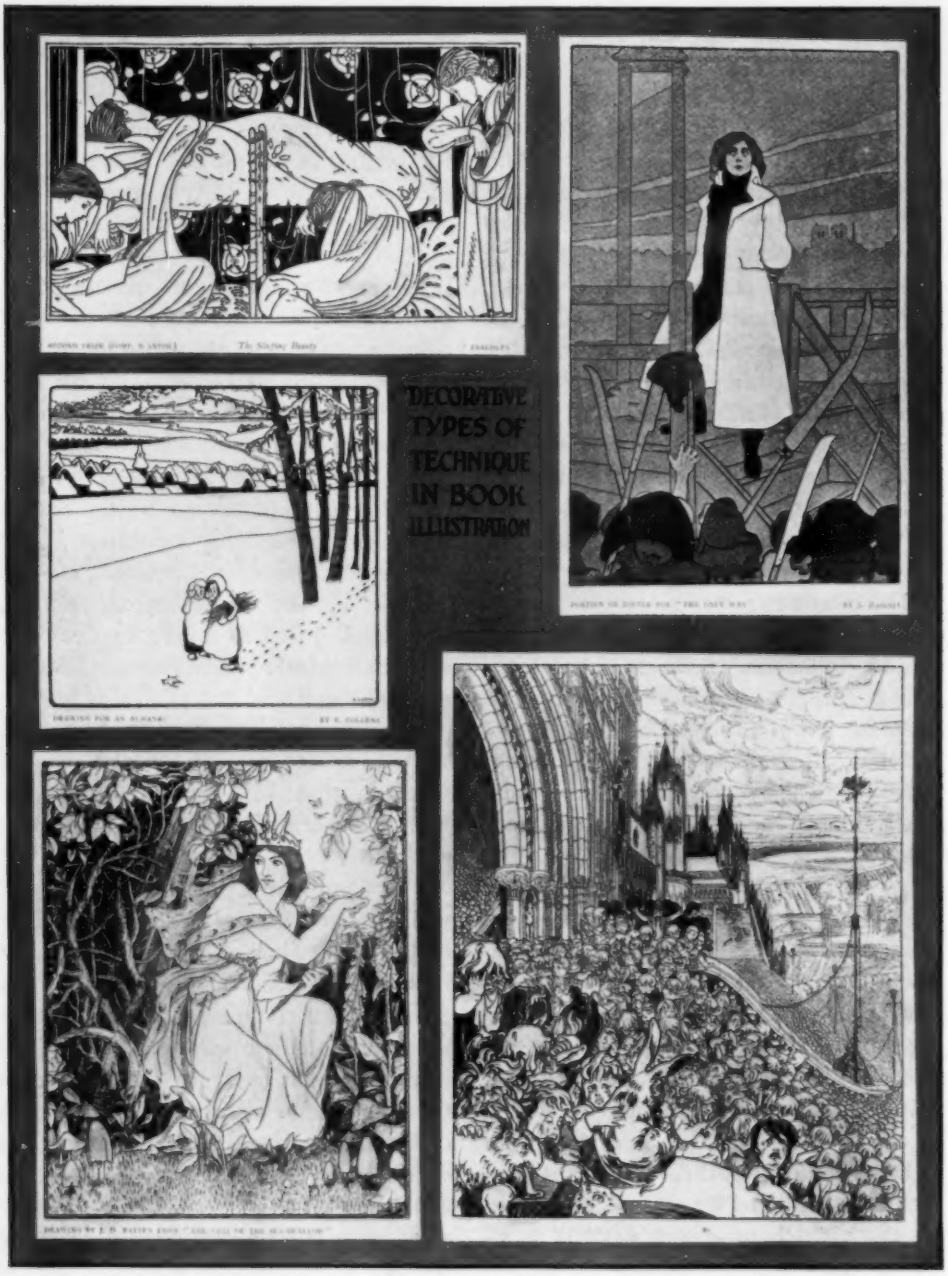
Hand-lettered forms were made on cardboard for business cards, letterheads, billheads, package labels, envelope corners, headings for publications and for covers for books, magazines, catalogs, programs, etc. Hand-lettered forms were also made for greeting cards, book labels, and wrappers for paper boxes. After a hand-lettered form had been drawn and passed upon, a printing plate was made of it by the photo-engraving process.

It should be understood that no regular type or printing material of any kind was used by the students following this course. The students simply worked with pens, pencils, crayons, India ink, brushes, water colors, cardboard and other equipment of this variety, the plan being to prepare layouts for printers, and original hand-drawn designs to be made into printing plates by photo-engravers. The *art* of typography was the stellar thought behind every piece of work produced by the scholars, and the results were the same as though the students had been working with actual printing material. Commercial art, in the strict sense of the term, illustration or pictorial designs, were not features of the course as the purpose was to teach exclusively the art of typography.

Among the important results accomplished by this course were constructive reasoning, appreciation of beautiful printing,and the production of sketches, color schemes and typographical layouts which could be followed by any practical type compositor in the regular routine of the composing room. In many instances, the layouts could also be followed to advantage by the operators of type-setting machines. The average machine compositor is not trained in the fundamentals of art typography, and as a rule, he does not even understand the proper application of large-size initial letters to text matter composition, and the layout sheets will help him to produce work on the machine that will compare favorably with the work of the best hand typographers.

The Course in Typographical Design which was originated by Professor Ege is something which should be adopted by industrial art schools in general. It is a course which could also be arranged by many of the larger colleges and universities. While it is true that numerous vocational schools already have a course of the kind referred to, the plan should be extended to a much wider scope so that students in all parts of the country may have the opportunity of learning the art of typography—an art that is growing more useful every day.

The great advantage of Professor Ege's course in typography is in its being



DECORATIVE RENDERING OF ILLUSTRATIONS EITHER IN LINE OR TONE ARE BECOMING MORE AND MORE RECOGNIZED AS THE MOST HARMONIOUS FORMS OF ILLUSTRATION FOR COMBINATION WITH TYPE IN BOOK CONSTRUCTION

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available for journeymen printers and advertising writers as well as for printing apprentices. Commercial artists may also learn much that could be applied to their regular work by attending such a course, for while a commercial artist may be a master of pictorial color work, he may not have had training in the matter of typographical forms, and if such is the case, he does not know the correct use of type faces in hand-lettering.

A decided improvement is needed in much of the hand-lettering that is being done today. We refer to hand-lettered forms used for magazine headings, display advertisements, business stationery, street car cards, labels, and other printed matter of different kinds. Some of this hand-lettering is beautiful and easy to read, while other specimens are not beautiful or legible on account of the "fancy" design of the characters. If the artist doing hand-lettering will imitate the style of the old type characters employed by the early typographic printers, he will always produce letters that will be graceful in shape and easy to read. Vocational training schools having a class in typography and hand-lettering can accomplish splendid work by teaching the students to produce *readable* printed matter. It has been well said that nothing can be beautiful without being at the same time useful and certainly a form of typography that is not legible cannot be beautiful.

Another important fact which deserves the close attention of all those interested in the advancement of the art of typography is that there are now probably 60,000 type-setting machines of various makes in daily service throughout the world. All kinds of type composition are now being produced on the machines, including display advertisements for newspapers and magazines, and job-work of many different varieties. Art typography, however, cannot be set up on the machines unless the machines are equipped with the right matrices for casting readable type-faces, and unless the operators of the machines are trained in the principles of art typography.

Think of it! There are probably more than 100,000 operators of composing machines now employed in the printing and publishing industry throughout the world, many working during the day-time, and many others working at night on the same machines. The great majority of these operators could be trained to produce better work on the machines. Layout sheets, prepared by artist-typographers, would solve the whole problem, layout sheets which would not only determine the typographic design of each form, but which would also specify the faces and sizes of machine type to use for each form. This means that under the right conditions, beautiful typography, suitable for the highest grade of printed matter, could easily be set on a composing machine.

Teachers of the art of typography, whether they be employed in art schools or ordinary vocational training schools, should study these facts about the type-setting machines, and then should instruct their scholars accordingly. Too much attention in the printing and publishing industry is being paid to the matter of *increased production*, and not enough thought is being devoted to the artistic side of machine composition. Let us have both quality and quantity

by following the right methods of working. It takes no greater amount of time to produce a beautiful form of typography, either with hand-set type or machine-set type, than is required for turning out an ugly form of typography. It is merely a matter of knowing how to do good work.

A layout sheet, prepared by a skilled artist, makes it possible for even a young apprentice to produce a good form of typography.

Teachers of the art of printing should instruct their students in the following points about good typography:

A typographic form for a title page of a book, program cover, business card, or for any kind of printed matter, is harder to read when set all in capitals, than the same form set in Capitals and "Lowercase" letters.

In the majority of cases, a form of type should be set in the same face of type, or in different sizes of the same face of type. When a number of different type-faces are used in the same form, the entire matter is harder to read than a form set in the same series of type.

There should be a close relationship between the appearance of forms used for printing a complete set of business stationery, such as envelopes, letterheads, billheads, note-sheets and statements. That is, the same faces of type, the same general design, the same color scheme, the same style of decoration (if any is applied) should be used for the "family" of business stationery.

A book page composed in 12-point Old Style type, like the famous Binney Old Style, for example, should be 2-point leaded, and is easier to read than a form set solid in 10-point of the same face of type This is a well-known fact, of course, and yet many printers do not seem to know it.

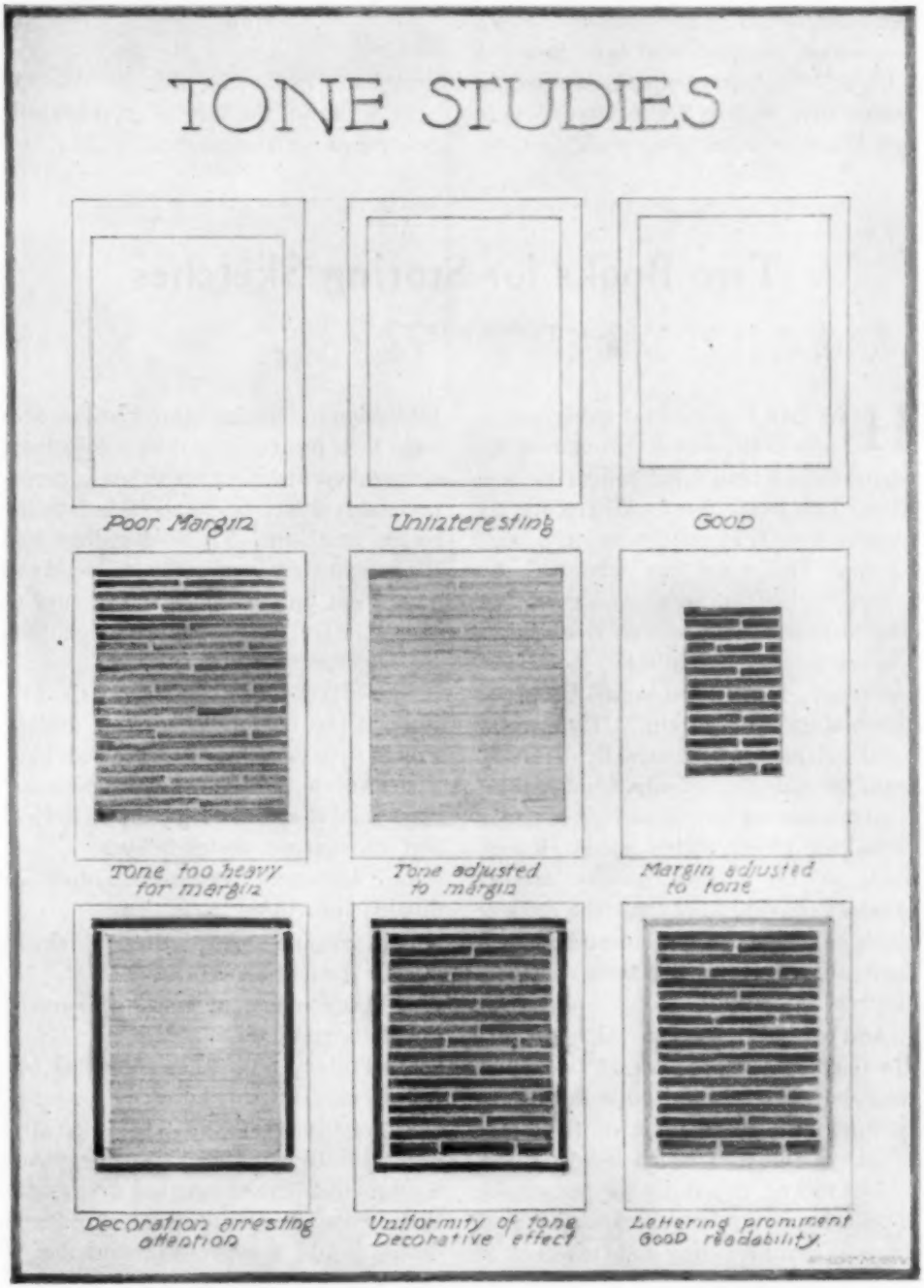
A number of lines of small-size type, say 10-point Binney Old Style, and set 20 ems of pica measure, will be easier to read than a number of lines of the same type set 40 ems measure. In other words, a narrow column of type matter is easier to read than a wide column of type matter.

All text matter should be leaded whenever possible—2-point leads between 6-, 7-, 8-, 9-, 10-, 11-, and 12-point text matter will do in most instances. Larger sizes of type used for text matter, such as 14- and 18-point should be double-leaded.

Condensed faces of type or expanded faces should never be used when standard faces are available. Condensed and expanded faces are distorted, and are not appropriate for high grade typography.

It is not a good plan to have a large variety of typefaces in a composing room. The early printers did excellent work with only a few different faces of type. With a few complete series of classic type faces, such as Caslon Roman, for example, a printer of these days can set all kinds of good typography suitable for the general run of work that comes to the average printing establishment.

Stock ornaments, decorative type-borders, plain panel rules, etc., should be used sparingly by the modern typographer, and there should always be a reason for using any kind of decorative material in connection with type composition. When initial letters, decorative borders or other ornaments are used, there should be harmony



MR. SALADE ILLUSTRATES THE IMPORTANCE OF MARGINS AND TONE VALUES FOR TYPE AND DECORATION PAGES. THIS PAGE BEARS CAREFUL THOUGHT AND STUDY

between the design and color-tone of the decorative element and type face. A "black" or heavy ornament used in connection with a light face of type would not be in harmony with the type.

Without question there is a brilliant future for teachers of the art of typography, and in fact for all those who will help to raise the art of typographic printing on a higher plane.

Two Books for Storing Sketches

TED SWIFT

HOW MAY a student bring out of himself the power to express the vigor of line and form which he sees about him every day? Where are the objects now that were seen on a walk through the wood last summer? Or where is the beautiful swing of line and form of that great oak tree seen on the same trip! Forgotten! Lost from memory! Why? No sketch book was taken along on that trip. 'Tis then the good art student realizes the material lost and immediately sets about making a first-class sketch book. No paper, pencil, or eraser is too good! Everything of the highest quality and of greatest convenience. For the art student believing in the inspiration his tools afford him wishes to make them the best.

And so it is of great value to him. He may own expensive art books; he may have collected into scrap-books, pictures and the technic of the finest artists of the land which is very good; but he will never acquire the permanent knowledge and power of execution that comes from preparing a sketch-book of his own impressions.

Its value has been proven over and over. For, men of art matured in their profession and having established on firm basis their principles of design, look back on student days as they come across their early sketch-books and this thought comes to them: These drawings and the insight they have given me could not have been purchased with any sum of money. Toil, but fascinating toil, purchased them.

Indeed! consider that student wise who stores away in notebooks the designs which in nature have impressed him. There are two kinds of sketch-books discussed in the following; the historical and the nature sketch-books.

The historical sketch-book may be divided into three parts thus:

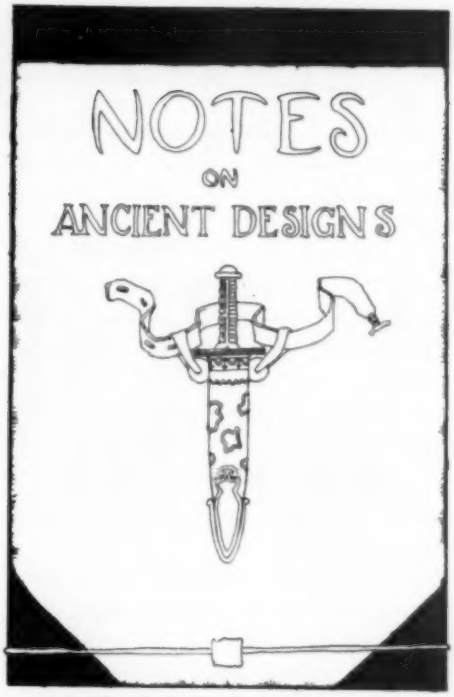
1. Costume (head-dress, cloak, leather pouches, brooches.)
2. Implements of warfare (swords, shield designs and such.)
3. Pottery and other historical objects (vases, drinking horns.)

A very interesting study is created when the student copies the object as it is seen, then draws original interpretations with new variations of form and design. Add a new form and design but retain the character of the particular country to which the design belongs.

When drawing objects, a short memo-

Cover for Nature Sketch Book

TWO SKETCH BOOKS
AND
THE NATURE OF
THEIR CONTENTS
Ted Swift



Cover for Sketch Book of Historical Designs.

NATURE SKETCH BOOKS GROW MORE AND MORE VALUABLE WITH THE PASSING YEARS, BECOMING IN TIME VERITABLE TREASURE CHESTS OF ARTISTIC INFORMATION

The School Arts Magazine Alphabeticon, April 1922

randum should be made as to what country and period the object belongs. Then when applying them to various drawings later, it will be easier to apply their correct historical value.

The second form of sketch-book, the nature book, is the most convenient article about the equipment of the outdoor worker. This book is to be confined only to outdoor sketches of plant and animal life and the larger forms of landscape. In the collection of these various sketches, the student may well see the part they take in furnishing the most native touch to the subject he wishes to draw. If the design calls for an oak tree, the student merely has to turn to his tree sketches to obtain one in all its original conception. When on a trip this sketch-book is especially serviceable, for it can be swung over the shoulder in a case always at hand.

The following method of construction may be found convenient in making sketch-books:

1. Purchase a typewriter tablet or other good pen and pencil paper (about one hundred pages—8½ by 13 inches).

2. Cut stiff piece of cardboard (9 by 14 inches).

3. Invert tablet upon stiff cardboard (leaving edge of cardboard to protrude over sides and bottom of tablet).

4. Punch three holes along top and insert small bolts.

5. Paste heavy manilla paper overlapping the top 2 inches. Fold and paste down the back.

6. The rubber band is secured by tying a knot in it and drawing it through the cover.

7. At the lower corners of the cover are pasted two rectangular shaped pieces of manilla paper (size 2 by 4 inches).

8. The bag which may be made of any durable cloth serves as the carrier.

The drawing, "My Tree Book," shown in one of the illustrated pages was taken from a sketch made from nature. This suggests to the student how he might adapt "Old Dame Nature" more to natural as well as to abstract designs. Say, that's a mighty interesting thing to do! Draw a sketchy, lively outline of a tree. Put in a few gnarles and crooks. Outline also the mass of foliage so that all spaces become pleasing and balanced. Then work out the limbs and leaves in decorative motives and lines. If the student follows along this course of study, becoming really enthusiastic over sketching, filling his notebook with virile, painstaking sketches, he will create a valuable book and a treasure store of precious knowledge. Draw with that sincere effort as if the work was to be submitted for criticism to a discerning art master.

The writer's personal fancy led him to make a book which would be thick enough to carry all the various sketches made on outing trips. The book is strongly bound to insure against rough usage. So far it has been taken on three trips. Preceding the drawings of each trip there is a title page as: "Sketches along Pope Creek, June 1921." There are in this river scenes, landscapes, details of tree study, flowers with drawings of detached parts, bees, bugs, frogs, turtles and anything in the animal kingdom that would pose long enough for a drawing ever so slight.

In speaking of posing creatures, some will sit very nicely. A big "French" frog with most polite steadiness once sat

SKETCH CLASS DRAWINGS MADE BY THE STUDENTS OF THE EAST HIGH SCHOOL, CLEVELAND, OHIO, ILLUSTRATING STRENGTH AND SIMPLICITY OF TREATMENT WITH BRUSH DRAWING. MISS MARY SUSAN COLLINS, INSTRUCTOR

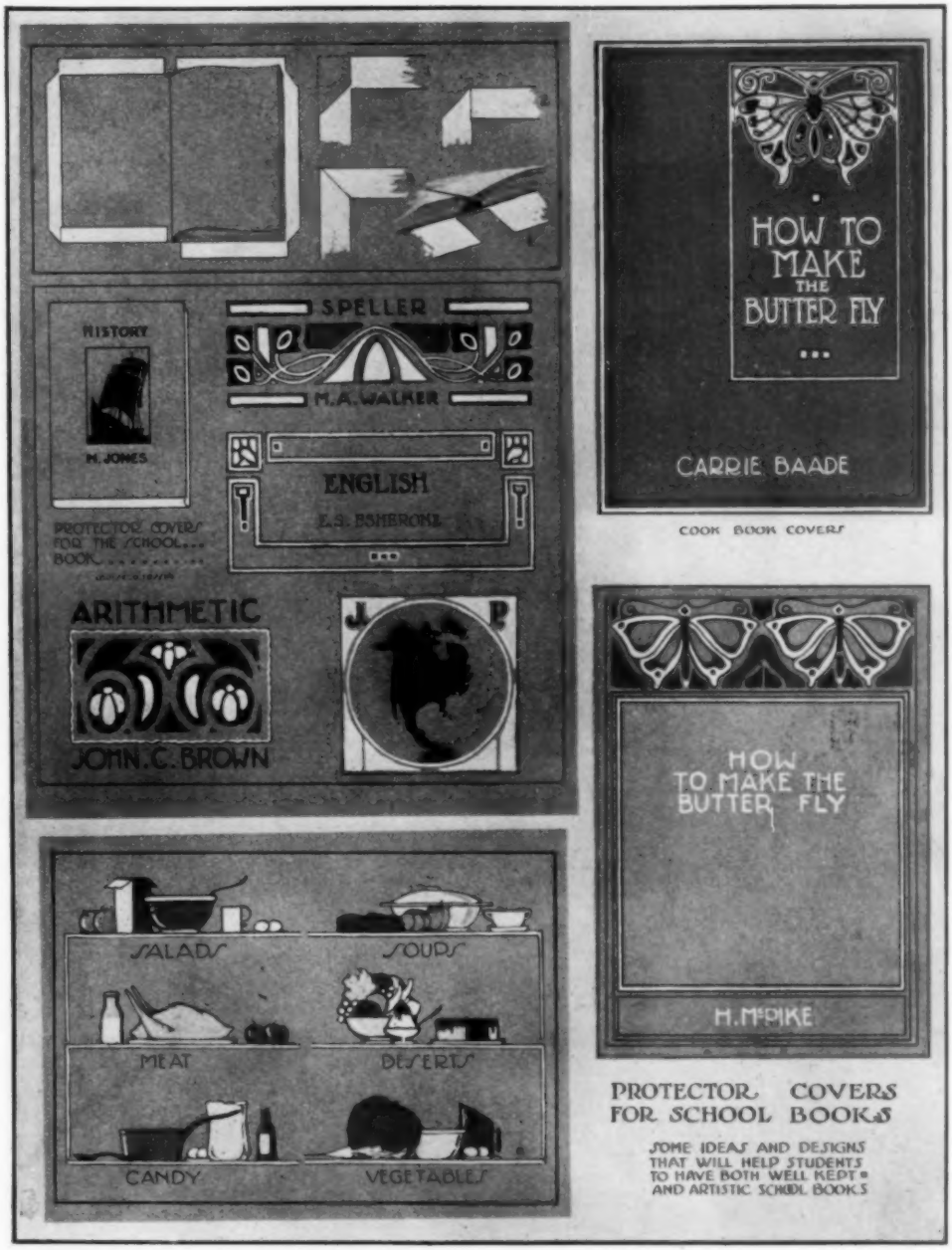
through a long pose as a sketch was being made of him. As the cold mountain stream rushed by him he was as still as the stone he sat upon. Although he posed without the slightest show of interest in his portrait sketch, nevertheless he was a fine example of patience. That is a rare quality to find in wood creatures. It is very seldom they will stay and not become alarmed. But the general terms between the artist and frog were such that they became very binding to the cramped sketcher. And at an instant's notice wide-eyed "Frenchy" was prepared to plunge to the depths of the stream to be seen no more.

Such is the wariness of animals as the artist will find. And in sketching them it is of great advantage to have a ready sketch-book that can be opened and worked upon without losing time.

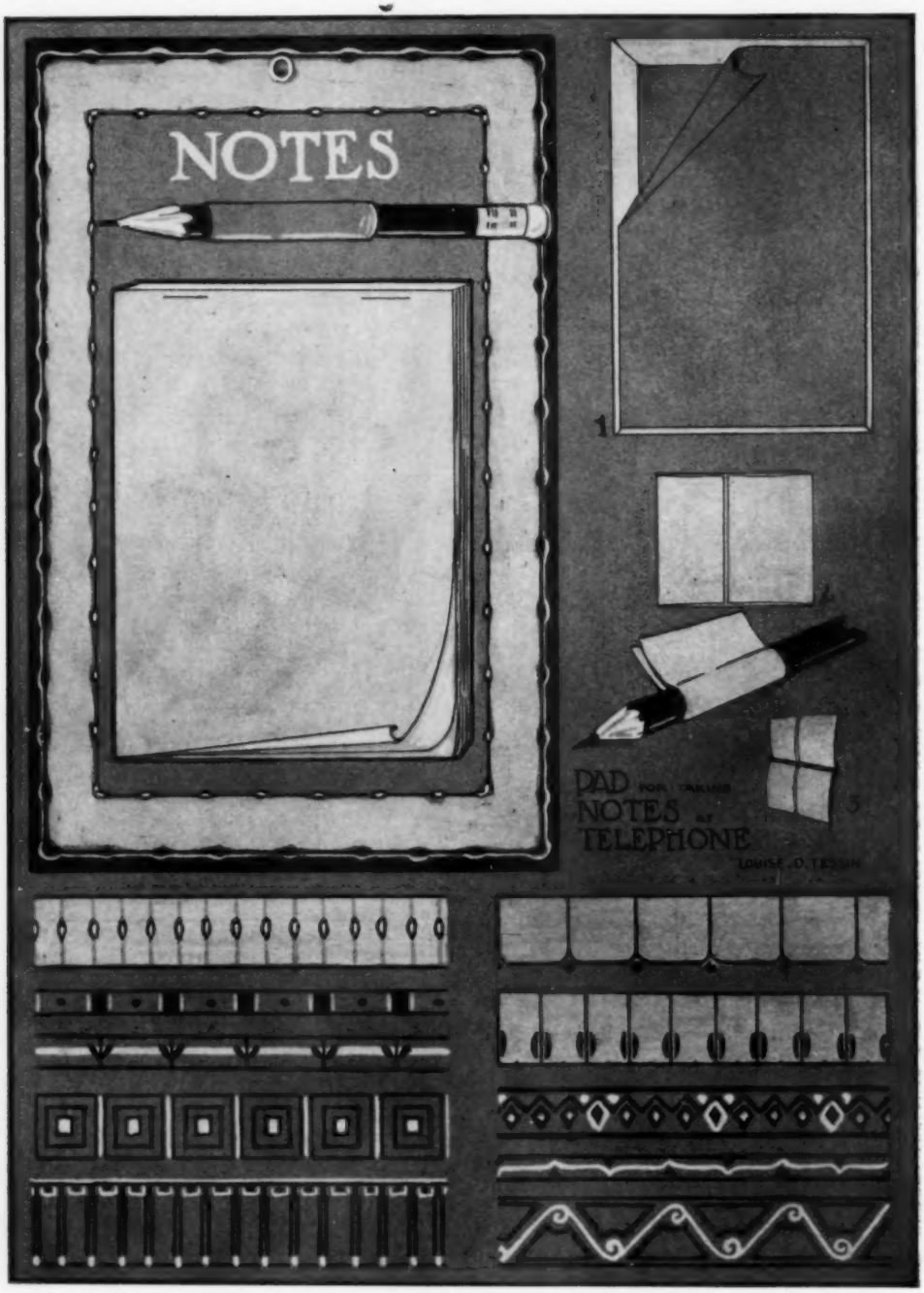
This book has an advantage over the loose-leaf sketch pad which cannot be held together and is frequently blowing away in the wind. The rubber band on the sketch-book overcomes this difficulty, for it can be stretched over the free pages next to the cover to hold them in place.

So the creative power is the thing to strive for. The earth is covered with beautiful line and mass! Why not collect and use it? Start this source of supply while still young and in your school years. No student can realize the help of this sketch-book until he has made one. To discover this help for yourself, to find what a great boost they give you, make one. Have the book prepared for vacation time when it comes.

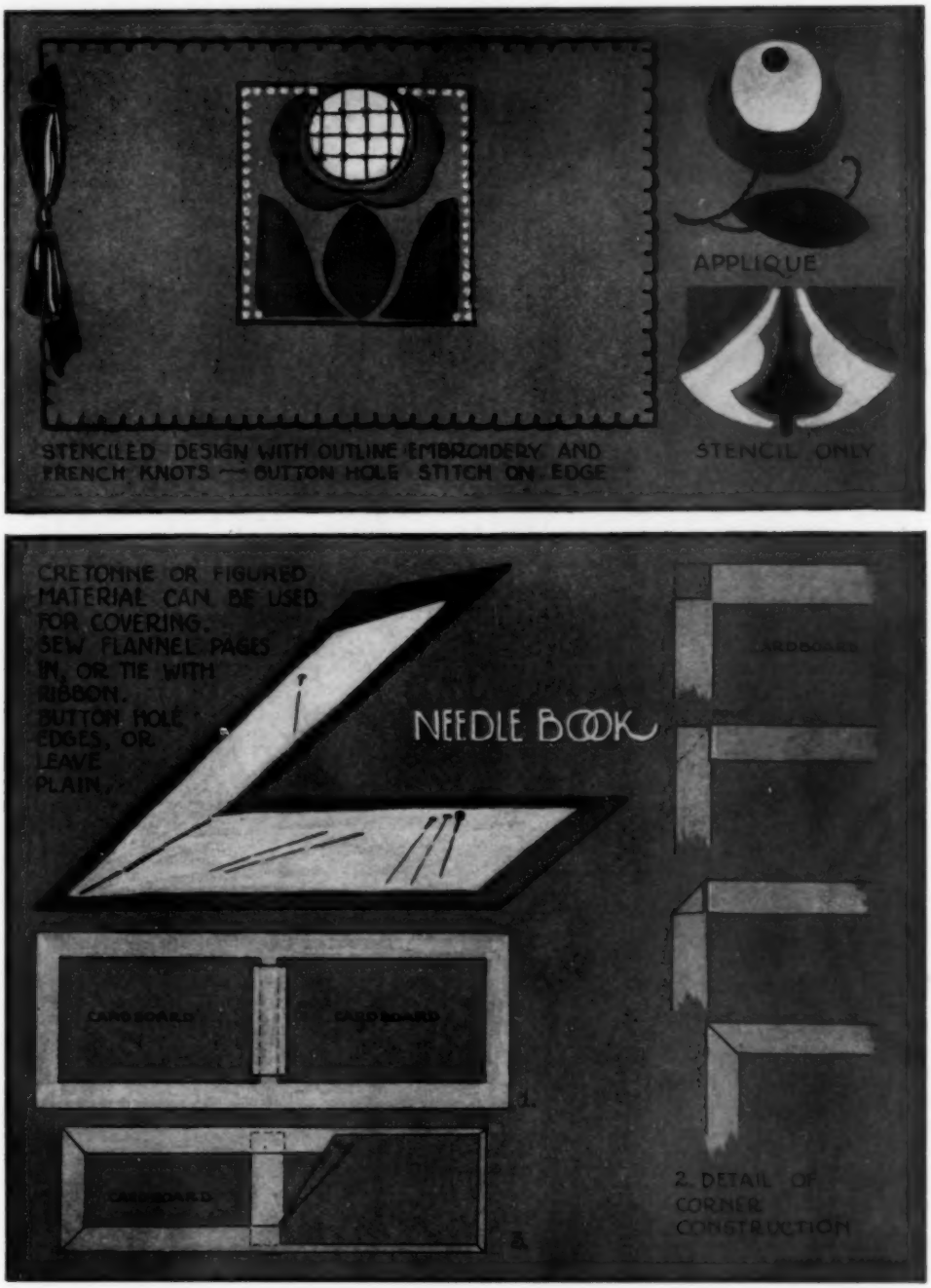
FROM LAND TO LAND, AND IN MY BREAST
SPRING WAKENS TOO; AND MY REGRET
BECOMES AN APRIL VIOLET,
AND BUDS AND BLOSSOMS LIKE THE REST.
—*Tennyson*



A PAGE OF HELPFUL BOOK IDEAS BY LOUISE D. TESSIN



A USEFUL AND ARTISTIC TELEPHONE NOTE PAD BY LOUISE D. TESSIN. A NUMBER OF BORDERS ARE SUGGESTED


APPLIQUE
STENCILED DESIGN WITH OUTLINE EMBROIDERY AND FRENCH KNOTS — BUTTON HOLE STITCH ON EDGE
STENCIL ONLY
CRETONNE OR FIGURED MATERIAL CAN BE USED FOR COVERING. SEW FLANNEL PAGES IN, OR TIE WITH RIBBON. BUTTON HOLE EDGES, OR LEAVE PLAIN.
NEEDLE BOOK
CARDBOARD
CARDBOARD
CARDBOARD
1.
2. DETAIL OF CORNER CONSTRUCTION

A NEEDLE BOOK BY MISS TESSIN TO BE DECORATED BY STENCIL DESIGN AND EMBROIDERY

The School Arts Magazine Alphabeticon, April 1922

A DOUBLE PAGE OF SPRING SHOWER FAIRIES

The School Arts Magazine Alphabeticon, April 1922

BY MARGARET CARLSON FOR LITTLE FOLKS TO COLOR

The School Arts Magazine Alphabeticon, April 1922

Bookmaking*

LEON LOYAL WINSLOW

THE EARLY Babylonians and Assyrians had no books, but their writings were preserved in the form of *clay bricks*. The writing was inscribed upon the bricks while the clay was still soft. Later the bricks were baked in the sun or sometimes in fire. The Romans used *sheets of soft metal* and *wooden slabs coated with wax* as writing materials. The Chinese employed the bark of the bamboo for the purpose until about 600 A. D., when they succeeded in producing a material resembling our modern rag paper. They kept this secret to themselves, however, until the eighth century, when the Arabs learned of it and introduced paper making into Europe.

The earliest permanent manuscript writings were inscribed upon *scrolls* which consisted of long strips of *papyrus* or *parchment* rolled upon sticks. These rolls were first held vertically for reading, but later they were read horizontally, or from end to end. Still later, shorter lines were used in the inscriptions, the mass of written characters being broken up into small oblong shapes which somewhat resembled page divisions. This dividing of the inscribed material into sections must have suggested the idea of folding the scroll between these divisons. At any rate the strip of papyrus or parchment was later folded backward and forward, giving it somewhat the form of an unbound book. The back edges later came to be tied together and in this way reading was made much easier and the rolling and unrolling of the scroll in reading were avoided. The idea was carried still farther by the Japanese who laced together the back edges of the pages of their *books*.

The art of bookbinding is much older than the art of printing. We find that the Babylonians provided clay cases for their inscribed clay tablets; the Romans made cases for their early manuscripts. The ivory cases of the double folded wax tablets of the second and third centuries A. D. should be mentioned in this connection on account of their beautiful carved decorations. They are among our most cherished examples of the Christian art of that period.

In the early days of Greece and Rome, manuscripts in scroll form were copied by scholars known as *scribes*. Books were later made and preserved in the monasteries by the monks who were our first real bookmakers. Some monks spent their entire lives in copying. Their monasteries were to be found all the way from Ireland to Jerusalem.

The early manuscript books of the middle ages were for the most part gospels and psalters, gorgeously decorated in brilliant colors St. Boniface, a monastic scribe, once wrote a letter to a friend in which he expressed the wish that his illuminated inscriptions might be gay and bright, "even as a glittering lamp."

The early printers were their own binders. Later the binding of books was handed over to stationers. William Caxton, the first English printer, bound his books in covers of tooled leather. His decorative patterns were usually made up of diagonal lines, the diamond shapes formed by the lines being filled by the dragon form. In the sixteenth century bookbinders began to use damask, satin, and velvet. Bindings of to-day are of paper, cloth, and leather. The cloth binding is an English invention which came into use about 1832.

There are two stages in the modern process of bookmaking. The first includes the writing of the manuscript and the arrangements between the publisher and author; the second, the overhauling of the manuscript by the printer's reader and the printing of the corrected manuscript.

In books of usual size, thirty-two pages are printed at one time on a single sheet. The

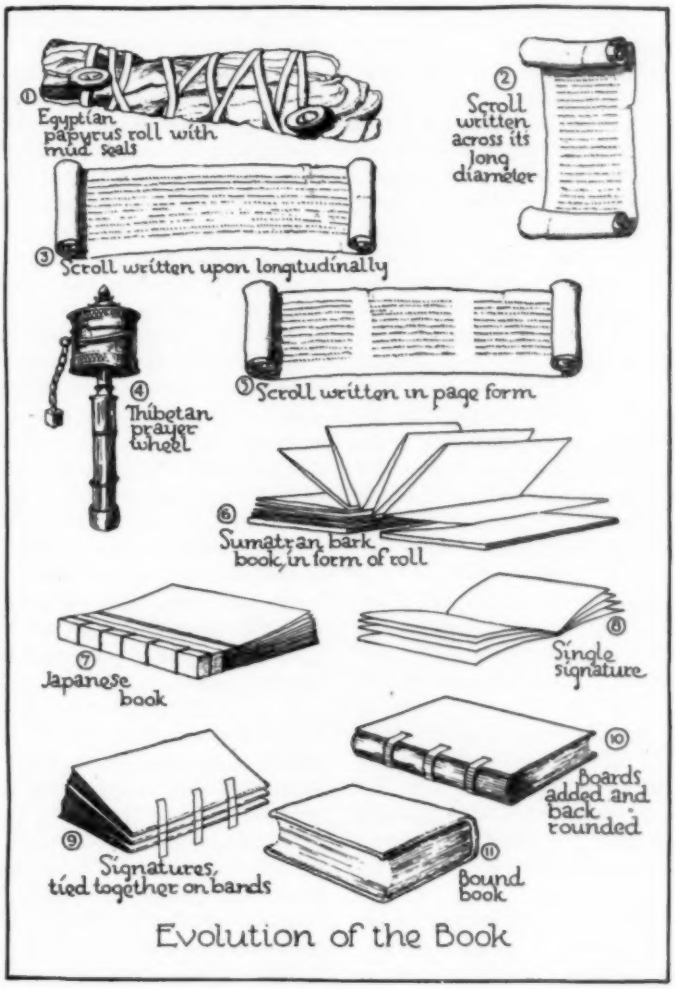
*The material presented in this article is included in Chapter I of *Elementary Industrial Arts* written by Mr. Winslow, illustrated by Mr. Jacobs and published by the MacMillan Company of New York. Copyright 1921 by the MacMillan Company.

types are so arranged on the press that when the sheet is cut and folded the pages follow one another in numerical order. The thirty-two page sheet is cut into two sections called signatures.

A signature consists of sixteen pages, and the ordinary book is composed of from twenty to twenty-four of these. A marvelous machine with mechanical hands gathers the signatures in their correct order.

But there are many steps before the book is ready for the reader. For instance, there is the matter of illustrations, which takes us back to the artist's original drawing, done in colors or in black and white. The drawing is photographed and a zinc or copper *plate* made of it. If the illustration is to be reproduced in colors, a plate must be made for each color, and the paper run through the press a corresponding number of times. A *zinc etching*, or reproduction in black and white, and a *halftone*, or reproduction in various values of gray, go through the press only once. A zinc etching is used in printing a *line cut* illustration.

Before and after sewing, in order to make the book lie flat, it is *smashed*, that is, compressed, in a machine exerting several tons of pressure, to squeeze out all the air. Sewing machines


① Egyptian papyrus roll with mud seals
② Scroll written across its long diameter
③ Scroll written upon longitudinally
④ Thibetan prayer wheel
⑤ Scroll written in page form
⑥ Sumatran bark book, in form of roll
⑦ Japanese book
⑧ Single signature
⑨ Signatures, tied together on bands
⑩ Boards added and back rounded
⑪ Bound book
Evolution of the Book

stitch the signatures into the composite book. These are fed to the machine, sixteen pages at a time, by an operator possessing considerable skill. Trimming follows smashing and sewing.

Another machine *rounds* and *backs* the book: that is, gives it the usual curved back and edge. A back strip is then glued on the unbound book, which is now ready for its cover or *case*. The cover goes through several processes. First two boards, cut the required size, are fed with the cloth into a machine that wraps and glues the cloth to them.

The covers are then placed about the pages and glued fast, after which the book is placed in a heavy press where it remains for at least twelve hours.

A folio is a book which is made from sheets which have been folded once, each sheet forming two leaves or four pages. A quarto is a book made from sheets which have been folded twice, each sheet forming four leaves or eight pages. An octavo is a book made from sheets which have been folded four times, forming eight leaves, or sixteen pages. In making up or assembling a book of many signatures, each sheet in consecutive order is taken from the proper pile, folded, and stitched. Then the assembled sheets are glued and placed in the case along with the other signatures as indicated above.

The great industry of bookmaking can only be appreciated by making a careful study of the slow processes of ancient times and of the evolution which has brought about our modern methods of production.

Just how printing was invented is a fact which has not yet been definitely learned. It is thought by many who have made a study of the art that the stone seals used by ancient peoples may have suggested the idea of printing. They were often made from precious gems and were *intaglio*, engraved or cut in, an intaglio being the reverse of a *cameo*, which stands out in relief. It was but a step from printing upon wax with a seal to printing upon a harder material with an engraved block. Visiting cards are to-day printed by means of intaglio plates by the process commonly known as *engraving*.

The Chinese were probably the first people to print. Engraved wooden blocks were used in China for the printing of books as early as the sixth century A. D. Printing was unknown in Europe at that time, however. A new application was to be made of it in western Europe by John Gutenberg, a German, about the year 1440.

Gutenberg's printing shop was quite different from our modern printing establishments. The first printing which he did was by means of blocks of wood on which he had carved illustrations and letters in relief (cameo.)

Gutenberg's discovery consisted in making type from antimony and lead. He succeeded in casting each metal letter by itself, making it possible to arrange the letters as he saw fit. In this way the same types could be used over and over in limitless combinations as they are used in printing to-day.

It is interesting at this point to recall that the Chinese had long before invented the process of printing. The method of printing with movable types has never been popular in China, however, owing to the almost limitless number of the characters which are employed in the written language of the Chinese. These signify words or ideas, not letters as in our language. China has excelled in her wonderful wood block prints, many of which are still regarded as masterpieces of industrial art.

John Gutenberg's discovery soon bore fruit in England, where, in 1476, William Caxton set up a printing press at the sign of the Red Pale, at Westminster. To Caxton belongs the credit of publishing the first book printed in the English language, a translation of "The Recuyell of the Historyes of Troye."

Both Gutenberg and Caxton employed a *screw hand press* equipped with a *flat bed* upon which the metal type was placed. Pressure was applied by means of a vertical screw turned by a bar. Such presses were at first made entirely of wood.

About 1800, a press was introduced in England in which a *cylinder* was substituted for the *platen*, or flat bed. This cylinder carried the paper over the type, pressing it down to receive the inked impression.

The flat bed press was the only one used to any great extent in the United States until about 1865, when William Bullock, of New York, constructed a *rotary press* which printed from an "endless" roll of paper. In 1847, R. Hoe & Co., of New York, produced a press

in which the type was on the surface of a revolving cylinder. In 1871, the same concern placed upon the market a rotary press which printed on both sides of the paper from curved *stereotype plates*. Our modern city newspaper presses are similar to the original rotary machine of R. Hoe & Co., although the mechanism has been constantly improved.

The setting of type in regular order for printing is called *typesetting* or *composing*. Typesetting is to-day performed by hand and by machine. In the hand method the type is placed in a shallow drawer which is divided into small compartments in which all letters or figures just alike are kept, the letters being so arranged that the type is most convenient for the *compositor*, who stands in front of the type case with the *copy* before him. He holds in one hand a little iron tray called a *composing stick* and with the other he picks out the type and places it in the composing stick. As fast as the composing stick is filled he places the type which he has thus arranged in a *galley*, which is a long iron slip or tray. In book printing the *proof* is taken direct from these galleys. The impression taken from the type thus set is called the *galley proof*. As soon as the proof has passed the inspection of the author, it is returned to the printer, who breaks his galleys up into page divisions and *locks* them securely in the *forms*. The second proof taken is usually the *page proof*. The proofs are corrected again and again and new proofs made until a final one is taken which is at last returned to the author for his final correction and approval. When this has been done the forms for printing one side of a sheet used to form one signature are locked securely in place in a strong iron frame called a *chase*.

In modern printing offices, type is for the most part made by means of the *linotype* machine which at one time casts the letters and spaces for a line. In this machine the type is automatically cast in type metal (antimony and lead) by means of *matrices*, or patterns, which form a part of its mechanism.

When only one edition is wanted, as in the case of small job work, the printing of a book is generally done directly from the type; and after printing, the forms are torn down and the type distributed in the trays for future use. When later editions are likely to be called for, *stereotype* plates are sometimes made. In this way the original type arrangement can be preserved. Stereotype plates are cast in cylindric form for use on the rotary presses employed in newspaper work. *Electrotype* plates are generally used in book printing which is done on a flat bed.

Stereotype plates are made of type metal which is composed of tin, lead, and antimony. The plates are made by pressing a prepared pulp of wet papier-mâche upon the face of the original type. When this pulp has taken the positive impression from the type and has become dry, molten type metal is poured over it to the required thickness. The plate thus formed is fixed upon a wooden block making it of the same thickness as the type stems, in order that it may be placed in the forms and the chase along with the type.

In the process of electrotyping the impression is taken by placing over the face of the original type a sheet of wax which has been heated to the proper degree of softness. When this wax positive impression has been taken, the sheet of wax is placed in a liquid through which passes an electric current, which deposits a thin coat of copper over the wax. This thin copper sheet conforms to the letter shapes. It is now taken from the wax and is backed up and made strong with type metal. The *electrotype* plate at this stage resembles the stereotype plate used in newspaper printing except that it has the outward apperance of being made of copper. Stereotyping is quicker and cheaper than electrotyping. Electrotyping is more durable, however, and is better suited to high-class printing on the finer grades of paper.

Printing is commonly accomplished by steam and electric power, the paper being fed in at one end of a machine and turned out a finished *printed* product at the other, in the case of magazines and newspapers often at the rate of one hundred thousand copies an hour. When we stop to compare the early methods of printing with the methods employed today, we marvel at the wonderful advance in this industry, which has made knowledge easily accessible to us all.

The Making of a Simple Booklet

A simple booklet may be made in which to preserve our essays, drawings, and collections.

The construction of the booklet need not be elaborate. The pages, perhaps 7 inches by 9 inches in size, are fastened together by punching and lacing. A piece of flexible paper will serve as a cover. A simple cover design appropriate to the subject of printing is made. This design will include:

(1) A marginal line.

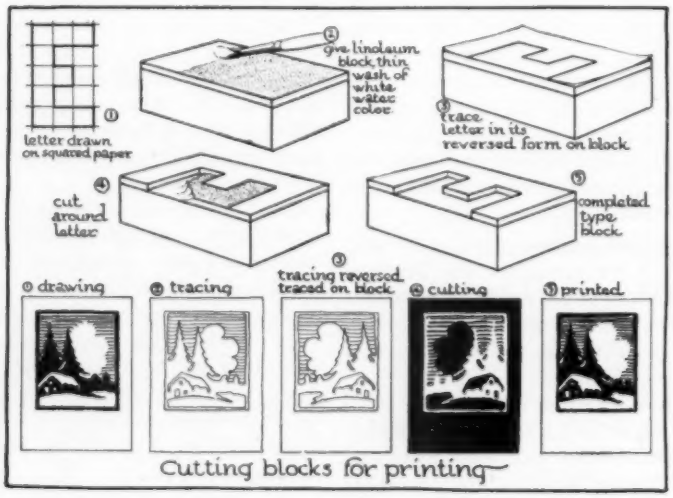
(2) The title and the name of the author in free hand lettering.

(3) An appropriate *spot* or *unit* which may symbolize a printing press, a printer at work, or a shelf of books.

The design for the unit will be transferred to a linoleum block (a block of soft wood about an inch in thickness to which a piece of linoleum, perhaps three sixteenths of an inch in thickness has been glued.) Before transferring the design it may be necessary to reverse it by tracing the lines on the back of the sheet. This may be done by holding the paper against a window pane. The linoleum is cut away from those parts of the design which are not to print. A pad is made by rolling up a strip of cheese cloth so that at least four thicknesses are piled one upon another. Over this pad is poured the ink, a mixture of liquid glue in which water color paints (tempera colors preferred) have been mixed. If the mixture is too stiff, add a few drops of water. There should be no superfluous ink piled up on the pad. If the ink does pile up on the block, it can be removed with a dry cloth. The block is applied to the pad several times before a print is made. It should be revolved slightly in the hand after each application to the pad in order to provide for an equal distribution of ink over the surface of the print block. By the use of the ink pad and linoleum block the design unit is printed upon the cover in just the place where it will appear to the best advantage. A *complementary* color scheme should be used, the color employed in the printed unit being the complement of that used in the marginal line and lettering, as, for example, yellow and purple-blue, red and blue-green, yellow-red (orange and blue, etc.).

The Making of a Japanese Book

Materials: two cover boards of strawboard, 3¾ inches by 6¾ inches; two pieces of strawboard for laced back, 1 inch by 6¾ inches; two pieces of cloth for cover hinges, 4 inches by 14 inches (this will make two hinges 4 inches by 7 inches); two pieces of colored paper to cover


① letter drawn on squared paper
② give linoleum block thin wash of white water color
③ trace letter in its reversed form on block
④ cut around letter
⑤ completed type block
① drawing
② tracing
③ tracing reversed traced on block
④ cutting
⑤ printed
Cutting blocks for printing

strawboard covers, 6 inches by 7¾ inches; four pieces of paper for cover lining, two pieces 3½ inches by 6¼ inches, and two pieces ¾ inch by 6¼ inches; twenty pieces of paper for leaves, 6¾ inches by 11 inches.

(1) The twenty leaves are folded first. Place them in a pile on the table at one side, a short edge parallel with the front edge of the desk.

(2) Each of the sheets is now folded as follows: One of the short edges is folded over 1 inch and the paper creased. (This creasing is best accomplished by applying pressure first in the center of the fold and then carrying the pressure in both directions simultaneously with the index fingers of both hands. A pencil line is drawn 2 inches from the short edge of each sheet before creasing. By placing the edge even with this line, 1 inch of paper will be folded over.)

(3) Fold the opposite short edge over to the crease just made and place under the flap.

(4) Fold each of the nineteen pages remaining in like manner.

(5) Arrange the folded pages in a pile, each with the three thicknesses of paper on the same side. The covers are now assembled as follows.

(6) Place one of the small pieces of strawboard on the topmost folded sheet of paper. The folded sheet is 6¾ inches by 5 inches; the piece of strawboard, 1 inch by 6¾ inches. It is placed directly over the flap. Make three edges of the strawboard lie along three edges of the folded sheet.

(7) Now place one of the large pieces of strawboard on the folded sheet beside the smaller piece. This strawboard is the piece 3¾ inches by 6¾ inches. Make three of its edges lie along the three remaining uncovered edges of the folded sheet. The two pieces of strawboard are now ¼ inch apart, since 5 inches (the width of the larger piece of strawboard) minus 3¾ inches (the width of the larger piece of strawboard) minus 1 inch (the width of the smaller piece of strawboard) equals ¼ inch.

(8) Glue or paste is applied to the two pieces of strawboard which are now placed with their long edges ¼ inch apart.

(9) The piece of cloth which is used as a hinge is now wrapped lengthwise and, being 14 inches long, it goes entirely around the cover which is but 6¾ inches long. It will overlap almost ½ inch. (This is determined by the thickness of the strawboard.)

(10) The other cover is assembled in the same way.

(11) The boards are now covered with the colored paper which is allowed to project ½ inch on all four sides. The cover paper is pasted to the cover board, paste being applied to the entire surface of the strawboard. A piece of newspaper is used to protect the worker's table and a clean piece is placed over the work for pressing.

(12) After the surface has been covered the cover paper is cut at a *miter*, as shown in the illustration, at each of the four corners.

(13) Paste is now applied to each lap and the laps pasted down.

(14) The covers are lined with the two pieces prepared, 3½ inches by 6¼ inches, and ¾ inch by 6¼ inches respectively. The lining paper is pasted upon the inside of the covers. A space is left between the two pieces of lining paper in each case that the hinge may act freely.

(15) The pages and covers are now arranged and punched for lacing. The covers should be punched first and the pages may be marked for punching using the front cover as a guide. There may be either an odd or an even number of punched holes.

(16) The book is now laced in the manner shown in the illustration. An ordinary shoe lace or a piece of colored cord will serve this purpose. The leaves are left uncut.

If a light brown cover paper is used a tan shoe string will be effective as a lace. This will provide for an attractive combination of differing values of a single hue, *monochromatic scheme*. If another color is used a white lace may be dyed to the appropriate hue and value.

The making of a decoration for the cover will furnish an opportunity for design. The design may be made with water colors or crayons or by pasting upon the cover a cut silhouette and strips of paper to form the letters. There should be a lettered title. The subject of the book and its use should previously have been determined.

The Making of a Book of One Signature

The cover boards for this second book will be ⅛ inch wider and ¼ inch longer than the page,

in order that the covers may project beyond the pages. The size and proportions will be determined by the purpose for which it is to be made. Decide upon the use to which your book is to be put. The book described here is suitable for the mounting and preserving of reproductions of masterpieces in art. Each picture should be mounted on a page of odd number, while its story is written on the page at the left or on a page of even number. The mounting of the pictures, the arrangement of written material, and the observing of margins according to the best typography, are problems in design.

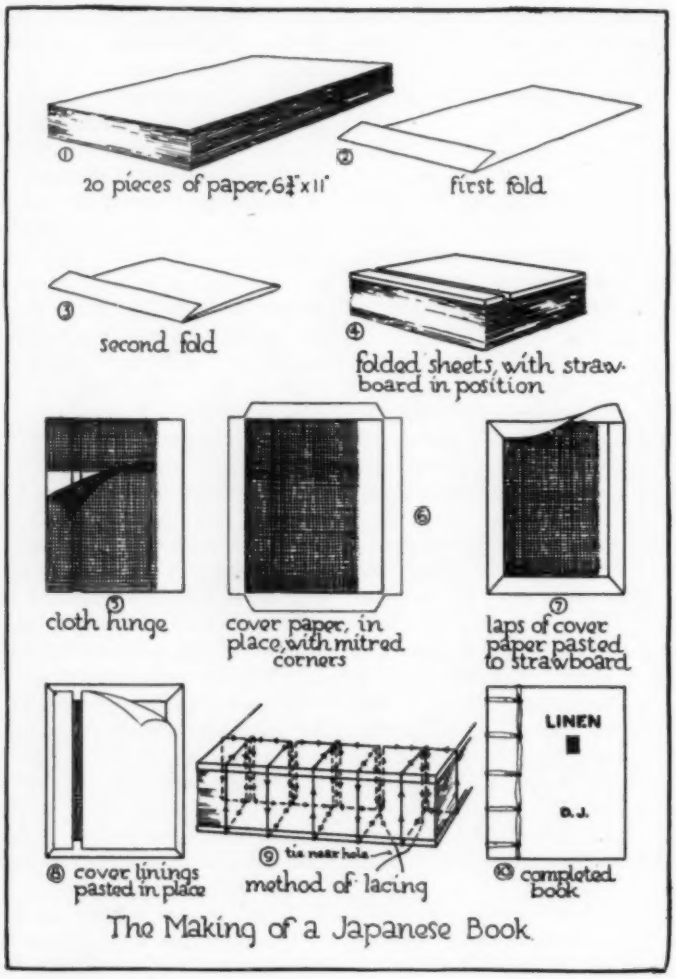
(1) Choose a rectangular piece of strawboard large enough to make one cover board.

(2) Place this on the desk so that it lies vertically in reference to the edge of the desk nearest you, which is horizontal.

(3) Place the ruler on the strawboard along the upper edge.

(4) Measure 6⅝ inches from the left corner and place a point.

(5) Place ruler on desk just below the lower edge of the strawboard and place a point on this edge 6⅝ inches from the left edge.


① 20 pieces of paper, 6¾" x 11"
② first fold
③ second fold
④ folded sheets, with strawboard in position
⑤ cloth hinge
⑥ cover paper, in place, with mitred corners
⑦ laps of cover paper pasted to strawboard
⑧ cover linings pasted in place
⑨ tie near hole
method of lacing
⑩ completed book
LINEN
O. J.
The Making of a Japanese Book

(6) Draw a line connecting this point with the one on the upper edge.

(7) Place ruler on left edge of strawboard and measure down on left edge 8½ inches from upper corner and place a point.

(8) Measure down on pencil line 8½ inches from upper edge and place a point.

(9) Connect this point with that on the left edge of the strawboard.

(10) Cut out cover board.

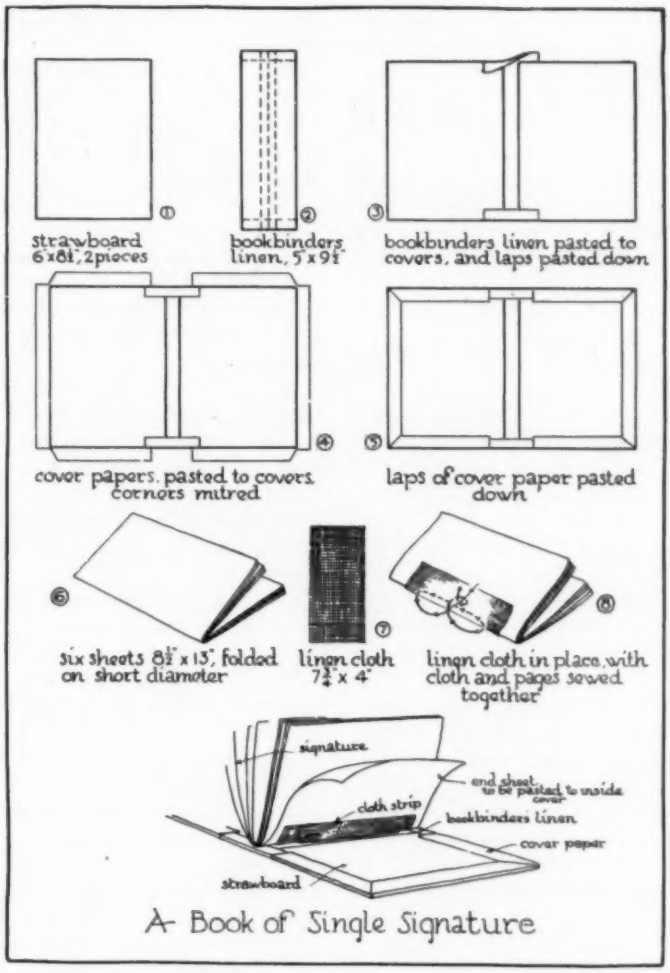
(11) Lay out and cut second cover board.

(12) To lay out linen back, measure off on back of bookbinder's linen, dimensions 5 inches by 9½ inches, just as you measured out the strawboard, first from the left edge and then from the upper edge.

(13) Draw a *center line* lengthwise of this material.

(14) Draw lines across either end parallel with the short edges of the material and ½ inch from them.

(15) Paste the linen back to the cover boards, leaving ⅜ inch between the boards (the thickness of the book will determine this measurement).


strawboard 6x8½, 2pieces
bookbinders linen, 5x9½
bookbinders linen pasted to covers, and laps pasted down
cover papers pasted to covers corners mitred
laps of cover paper pasted down
six sheets 8½ x 13, folded on short diameter
linen cloth 7½ x 4
linen cloth in place with cloth and pages sewed together
signature
end sheet to be pasted to inside cover
cloth strip
bookbinders linen
cover paper
strawboard
A Book of Single Signature

Caution: You should have at hand a pile of papers each about 9 inches by 12 inches. Torn newspapers will serve the purpose. These are to protect your work as it is being put through the various processes of pasting. The papers should be stacked before you and you should keep your work upon the uppermost piece which is always clean, since you crumple the papers and drop them on the floor as soon as they become soiled with paste or glue. These papers must also be used under the hand when rubbing one pasted paper upon another. At the close of the period the crumpled papers are picked up and put into the waste paper basket.

(16) To prepare cover papers 5⅝ inches by 9½ inches, measure as suggested above. (See steps 2 to 9 inclusive.)

(17) Paste cover paper to cover boards, cutting corners on miter and then pasting down laps.

(18) Count out half as many papers as there are to be leaves in the book, in this case six papers. There should be a supply of paper stock for this purpose cut 8½ inches by 13½ inches.

(19) Measure and cut this paper into pieces 8¼ inches by 13 inches.

(20) Fold each sheet to make two pages, 6½ by 8¼ inches.

(21) A piece of ordinary linen cloth is now prepared for holding the covers to the leaves of the book. It is measured and cut ½ inch shorter than the length of the papers (or 7¾ inches long and 4 inches wide.)

(22) Draw a center line lengthwise of this material.

(23) Place pages together and *stab* or pierce for sewing. Stabbing may be accomplished by means of a fine awl or a coarse needle.

(24) Place the linen outside the folded pages, its center line lying along the stabbed holes, and sew the pages and linen together, the needle first entering the center stabbed hole, proceeding in and out to one end of the row of stabbed holes then back to the opposite end, and so on to the center, where the knot is tied. There should be an odd number of holes, either 3 or 5.

(25) Fasten the signature or section of pages to the cover boards by pasting the linen to the cover boards, being careful to center the signature at the back, in reference to the cover boards.

(26) Paste down the end sheets (the leaves next to the covers).

The Making of a Book of Several Signatures

The following are the steps in the making of a book of eight signatures:

(1) Cut eight pieces of paper, 8 inches by 12 inches, for the leaves.

(2) Place the sheets in a stack on the desk with their longer sides along the edge of the desk nearest you.

(3) Fold the back edge of the uppermost sheet over toward you, to the edge of the desk, and crease.

(4) Fold the right edge of this folded sheet over toward the left, to within $\frac{1}{16}$ inch of the left edge, and crease. (The $\frac{1}{16}$ inch is allowed for the next folding, as will be seen after the next operation.)

(5) Fold the sheet again, as before, this time bringing the right edge entirely over to the left edge. All edges at the left should now be even. The folded signature should measure 3 inches by 4 inches. Turn the signature so that its folded edge is at the left and the open edge toward you.

(6) Number the pages in this first signature, placing numbers on both sides of each leaf, as in an ordinary book. Open out the sheet and note the arrangement of the pages as numbered. Were this to be a printed book, the numbers would guide the printer in arranging his pages of typed matter. Fold the signatures together again.

(7) Fold the seven remaining sheets in the same way, thus forming seven additional signatures.

(8) Take the first signature and place your ruler so that it lies along the folded edge, which will later be at the back of the book. Measure from one end of the signature, along this folded edge, the following distance, (without moving your ruler from its original position) and place points: ¼ inch, ¾ inch, 1 inch, 1¼ inch, 1¾ inches, 3¾ inches. These are the points through which the needle will pass in sewing the signatures to the *lay cords*, cords which in turn will be laced into the covers, thus fastening them securely to the book.

(9) Place the signatures in a stack, as they will be arranged in the book, placing the first signature on top. Number the signatures, using small Roman numerals. Number the pages consecutively, continuing to the end of the book. What will be the figure on the last page numbered?

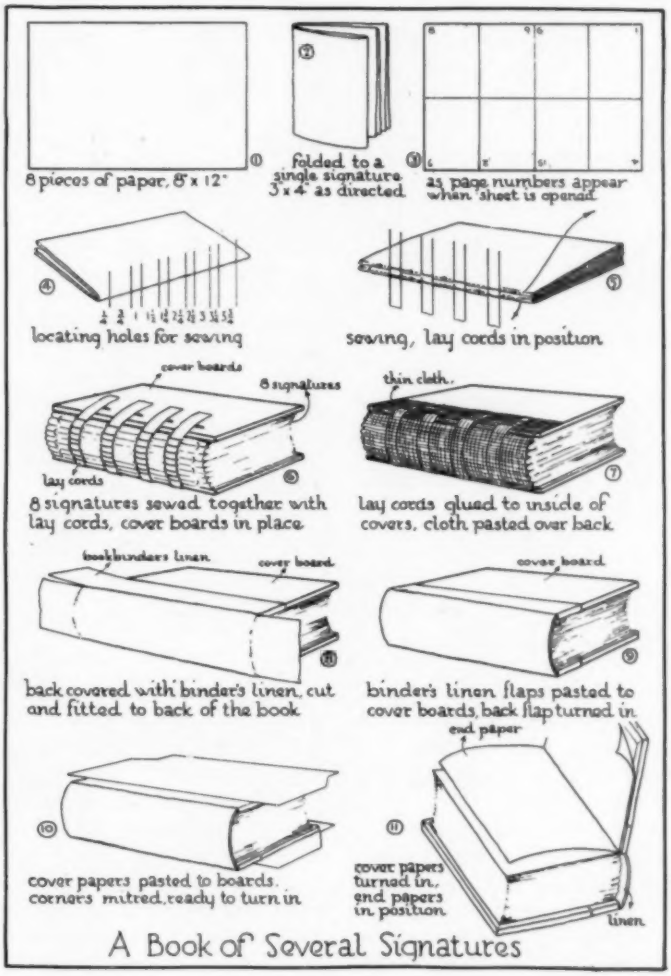
(10) Mark the folded edge of each of the signatures in turn for sewing, using the first signature as a pattern.

(11) Stab holes for sewing. This may be done with a large needle, an awl, or a hammer and nail.

(12) Provide four lay cords, each 7 inches long. Shoe laces are excellent for the purpose, though any strong cord will do.

(13) Start sewing the first signature to the lay cords. The progress of the needle will be as follows: Into first signature through the hole nearest one end of signature; to next hole; through this hole to outside of signature; around first lay cord to next hole; through hole into signature; on to next hole; through this hole to outside of signature; around second lay cord and into signature, etc., until the last hole has been reached.

(14) Place second signature in position for sewing. The progress of the needle will be as


8 pieces of paper, 8" x 12"
folded to a single signature 3" x 4" as directed
as page numbers appear when sheet is opened
locating holes for sewing
sewing, lay cords in position
cover boards
8 signatures
lay cords
8 signatures sewed together with lay cords, cover boards in place
thin cloth
lay cords glued to inside of covers, cloth pasted over back
bookbinder's linen
cover board
back covered with binder's linen, cut and fitted to back of the book
cover board
binder's linen flaps pasted to cover boards, back flap turned in
cover papers pasted to boards, corners mitred, ready to turn in
end paper
cover papers turned in, end papers in position
linen
A Book of Several Signatures

before, except that the direction will be reversed. When the needle has reached the hole above the first hole entered in the first signature a knot is tied to strengthen the union of the first two signatures, the loose end projecting from the first signature being tied to the thread extending through the corresponding stabbed hole in the second signature. The sewing is continued to the third signature, the direction of sewing again being reversed. When the last signature has been sewed to the lay cords, a final knot is tied to strengthen the union of the last two signatures. Place glue between the signatures near their back edges. A mucilage brush or splint of wood (a toothpick) should be used for this.

(15) Round the back of the book by pressing the front edges of the signatures with the thumbs, and place it in a vise or under a heavy weight.

(16) When the glue has set, spread more glue over the back of the book, being careful not to get any of it on the parts of the lay cords that are to act as hinges for the covers. (Lay cords with glue on them will break off when the covers are opened.) Leave your book under pressure until all the glue has set. (Paste may be substituted for glue if desired.)

(17) Cut two cover boards 3⅛ inches by 4¼ inches from strawboard or heavy pasteboard.

(18) Place covers in position, allowing them to project ⅛ inch beyond the front, top and bottom edges of the book. The space thus provided between the back of the book and the cover boards will be allowed for the working of the hinges.

(19) Mark points on cover boards to indicate the positions of the lay cords, placing these points ½ inch in from the long edge of each cover board and opposite the lay cords.

(20) Punch the cover boards to admit the lay cords at these points. The cords will enter from the outside of the book and will be glued to the inside of the cover boards.

(21) Cut a piece of thin cloth 3 inches by 5 inches for the hinge. Fold ½ inch of this material in at each end and paste down upon itself.

(22) Paste this cloth down, centering it on the back of the book.

(23) Place the book between the covers, thread the lay cords through from the outside, and glue their ends to the inside of the cover boards. (Remember to avoid getting any paste or glue on the parts of cloth which are to act as hinges.)

(24) Cover the back of the book with bookbinder's linen, pasting it to the cover boards, but *not* to the back of the book. This material must be cut and fitted to the back of the book. Try thin paper and work out a pattern before using your bookbinder's linen. When you have made a satisfactory pattern transfer it to the linen.

(25) Cover the boards with cover paper as you did in making the book of one signature. (See page 498.)

(26) Prepare a piece of paper for the end sheets 6 inches by 8 inches, and cut it into two sheets 4 inches by 6 inches. Each of these is folded to form two end sheets 3 inches by 4 inches, which may be decorated by an all-over surface pattern design printed with a wood block, if desired.

(27) Paste in the end sheets so that the covers may be opened and closed without difficulty.

(28) Put the book in press, or beneath weights.

The Making of a Portfolio for Dawings or Written Work

(1) Cut strawboard 9 inches by 11 inches for covers.

(2) Cut a piece of cloth for fastening covers together, 4½ inches by 13 inches.

(3) Place cover boards on desk, 1 inch apart.

(4) Cover the cloth with paste; then paste it on the cover boards, allowing 1 inch of cloth to extend at each end of cover boards.

(5) Turn the 1 inch of cloth extending at each end of the cover boards back over the cover boards and paste down.

(6) Cut bookbinder's linen, for covering the back of the portfolio, 4½ inches by 12 inches.

(7) Draw a line through the center of this linen, lengthwise, and place this line over a center line drawn lengthwise on the piece of cloth; cover with paste and paste to the cover boards.

(8) Turn down ½ inch of linen extending at each end on the inside of the cover boards, and paste down.

(9) Cut cover papers 8½ inches by 12 inches.

(10) Paste cover papers on cover boards. (Place them 2 inches from the center of the cloth back and paste.) Miter the corners.

(11) Cut another piece of bookbinder's linen, 4½ inches by 10⅜ inches.

(12) Place this on the inside of the covers so that it will be ⅜ inch from each end of the cover boards. Center it on the cloth; paste securely to the cloth to make hinge stronger.

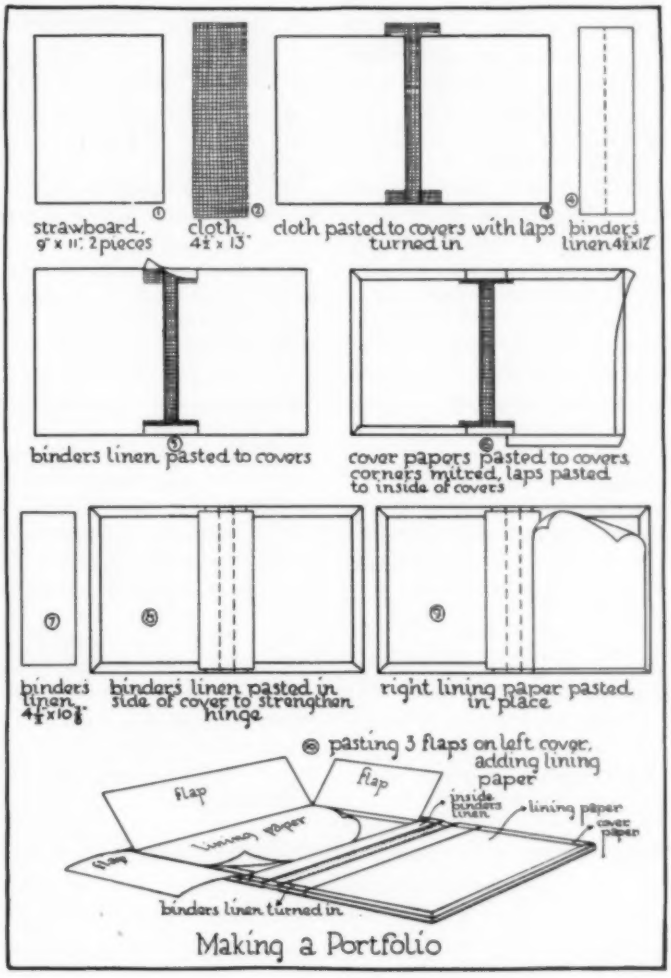
(13) Cut the inside lining papers, 7 inches by 10⅜ inches.

(14) Place one lining paper on the cover board, so it will be ⅜ inch from front, top and bottom of portfolio, and paste down.

(15) Cut three pieces of paper for flaps in portfolio, two pieces 6 ⅝ inches by 4¼ inches, one piece 10⅜ inches by 4¼ inches.

(16) Turn or fold down ½ inch on a long edge of each piece of paper.

(17) Paste these folded edges to the cover board still unlined, ⅜ inch from each of its edges, using the shorter pieces for the shorter edges.


strawboard. 9" x 11". 2 pieces
cloth. 4½ x 13"
cloth pasted to covers with laps turned in
binders linen 4½x12
binders linen pasted to covers
cover papers pasted to covers corners mitred, laps pasted to inside of covers
binders linen. 4½x10⅜
binders linen pasted in side of cover to strengthen hinge
right lining paper pasted in place
pasting 3 flaps on left cover, adding lining paper
flap
flap
lining paper
inside binders linen
lining paper
cover paper
flap
binders linen turned in
Making a Portfolio

(18) Place the other lining paper over the inside of these flaps and over the remaining surface. This will make the pocket of the portfolio.

(19) Lay portfolio flat in press and leave it until dry.

Posters

Posters offer excellent opportunities for combining industry and art. The motive for making one might well be the advertising of a school game or entertainment. In the making of a class poster all members of the class are provided with linoleum blocks just alike. An entire alphabet is cut, each pupil cutting a letter. Each member of the class now sketches a small poster design. The most satisfactory design is chosen for a large class poster. The large poster is printed, each pupil in turn inking and impressing a letter. The pupils should form in line, each with type block in hand, to spell out the words needed.

In applying the print block to the paper, pressure must be exerted upon each of the four edges of the block in turn. Only by taking this precaution is the printing of a clear image assured. If a press or an improvised press is used, this would, of course, be unnecessary. Two pupils should be chosen to act as foremen. It must be kept in mind that the letters forming the words must be placed close together and that the spaces between the words appear equal. The printed lines can be kept straight by means of thumb tacks and strings. The principle of *balance* should be observed in the arrangement of printed matter upon the page. A pad of soft papers, placed underneath the poster paper, will facilitate the printing.

The Monastic Scribe*

To those dim alcoves, far withdrawn,
He turned with measured steps and slow,
Trimming his lantern as he went;
And there, among the shadows, bent
Above one ponderous folio,
With whose miraculous text were blent
Seraphic faces: Angels, crowned
With rings of melting amethyst;
Mute, patient Martyrs, cruelly bound
To blazing fagots; here and there,
Some bold, serene Evangelist,
Or Mary in her sunny hair;
And here and there from out the words
A brilliant tropic bird took flight;
And through the margins many a vine
Went wandering—roses, red and white
Tulip, wind-flower, and columbine
Blossomed. To his believing mind
These things were real, and the wind,
Blown through the mullioned window, took
Scent from the lilies in the book.

—Thomas Bailey Aldrich.

Exercises for Study and Review

(1) Compare the methods of bookmaking that obtained during the middle ages with those of to-day.

(2) Visit a small job printing establishment if possible. If you have a print shop in the school building you should visit it as well. Write an account of your visits and make at least three drawings to be used as illustrations.

(3) How are we who live to-day affected by books and other publications?

(4) Imagine the world without any printing for the period of one year, beginning to-day. What do you think would be the result?

(5) How is type set for printing?

(6) Who was John Gutenberg and what did he contribute to the art of printing?

(7) Benjamin Franklin was a printer by trade. See what you can find out about Franklin as a printer. Look in the encyclopedia or elsewhere.

(8) Which illustrations in this article are halftone reproductions and which are line cuts?

(9) To what extent does a printer have to be an artist? Do you think you would be successful at the printer's trade? Why?

(10) Make a careful copy on squared paper, of the alphabet.

*From *Friar Jerome's Beautiful Book*. Houghton, Mifflin Company.

Good Ideas from Everywhere

TEACHERS EVERYWHERE ARE INVITED TO SEND IN ORIGINAL IDEAS AND ALPHABETICON MATERIAL FOR THIS DEPARTMENT. THE EDITOR IS GLAD TO CONSIDER ANYTHING SUBMITTED AND WILL PUBLISH IT IF POSSIBLE. HELPS FOR THE GRADE TEACHERS ARE ESPECIALLY DESIRED

Protecting covers for school books is the subject of a page sent in by Miss Louise Tessin. Practical ideas as to designs and construction are shown. Students will enjoy doing this work and it will help instill the right idea as to the care of our generally much abused school books. She writes:

"With a feeling of pride we hand back our school books in the office at the end of the school year.

"School books should be kept neat and in as perfect a condition as possible, and it can be done by making a protector cover for the books.

"In addition to constructing the cover, the art department can carry out the problem of cover designing by decorating the same with a design appropriate as much as possible to the subject matter of the book.

"The cover paper should be two and one-half inches longer on all sides than the book when open and laid out flat.

"Figure 1 shows how corners should be cut for pasting.

"Figure 4 shows how paper must be cut where the book binding occurs.

"Figure 2, fold tops and bottoms over first, and then paste sides to these (Figure 3) being careful not to get paste on book cover."

NEEDLE BOOKS make another good project for the art student.

"In making the needle book use plain material decorated, or figured material.

"Place cardboard on material as in Figure 1, pasting a strip in center as illustrated.

"Construct corners as in Figure 2, pasting top and bottom of material first and then sides.

"Interline covers with plain thin paper. Figure 3.

"Cut flannel pages a little smaller than covers. Sew them into cover or tie in with ribbon. Flannel pages as well as cover may be finished with buttonhole stitch or left plain. If material is to be decorated with embroidery, it must be done before book is bound."

TELEPHONE PADS is a project that is easily made and yet is practical and worth while. An interesting page showing the construction of a phone pad and some good designs to use is printed this month.

"Making the note pad that hangs by the telephone an attractive part of the room furnishing is a useful and interesting problem for an art class to study.

"Note pads can be obtained at any stationery store or at Woolworths. The cardboard mounting should be planned to fit this and allow for pencil holder.

"Cover cardboard with a tinted paper. Paste pad on. Then cut slit above pad through cardboard with sharp knife or razor blade the length of the width of the holder.

"Make holder of same tinted paper folded and pasted as in Figure 2. Then

fit around pencil and slip ends through slit. Fasten down on reverse side: Figure 3.

"Line back of mounting with plain paper: Figure 1.

"Decorate mounting with simple border of harmonious colors."

High School Annuals have reached us from all parts of the country. From these have been selected some of the best cover designs and illustrations in the hope that they may be of benefit to art teachers and students in their next publication.

On one page are group drawings that are treated in a bold massive technique. In these large areas have been filled in with solid black masses. On another we have drawings that are made mainly in heavy outline. In these the beauty of the page depends mainly on good spacing and rhythm of line. Care must be taken in this type of work to have the outlines heavy enough to hold the picture together.

Sketch Class Drawings from East High School, Cleveland, Ohio, are sent in by Miss Mary Susan Collins. Pose drawings with members of the class as models, memory sketching and figure composition have been some of the subjects taken up in special class work. This page of brush drawings shows fine strength and simplicity of treatment.

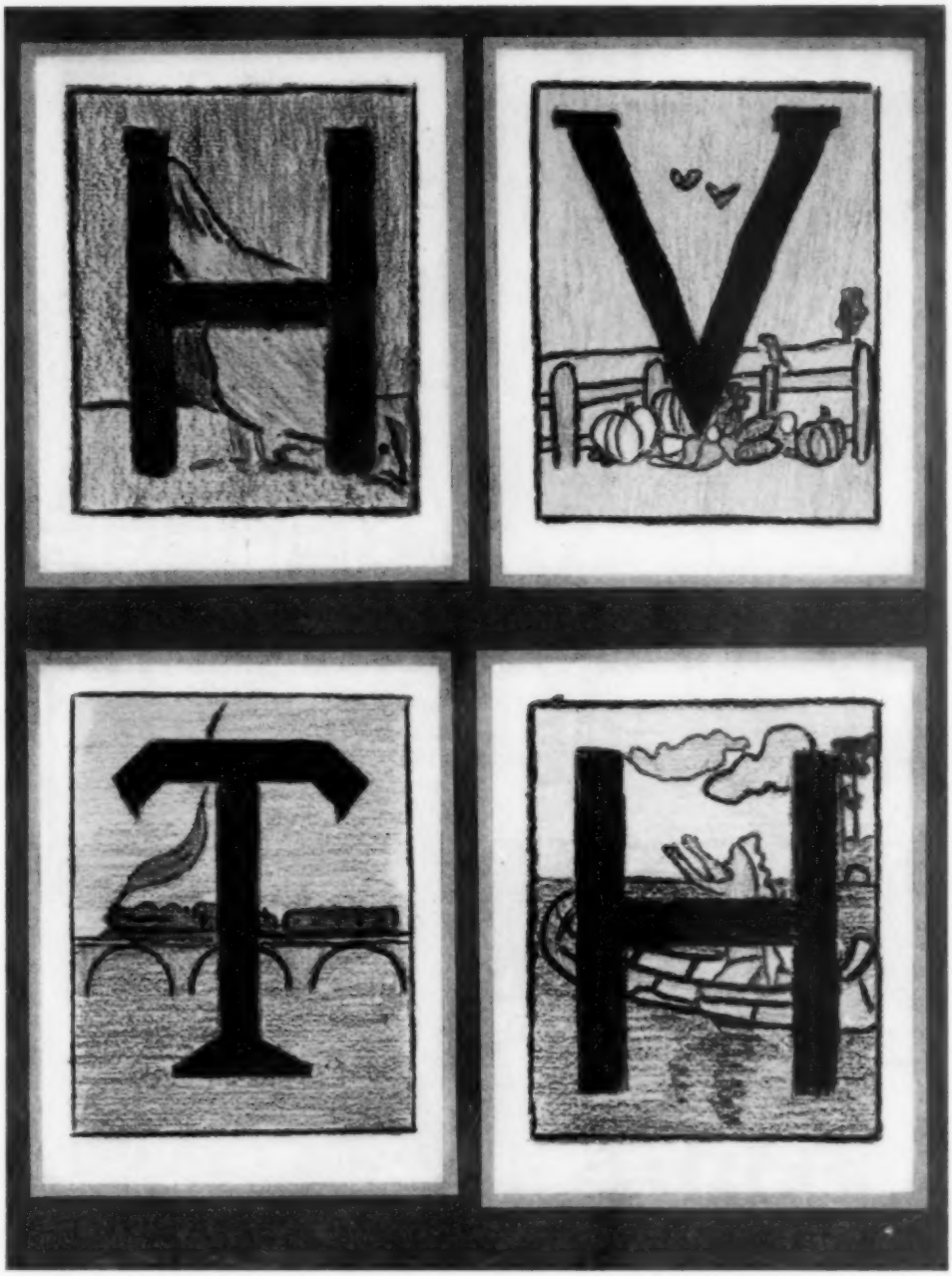
Initial Letters are always an interesting problem as they deal with drawing, design and lettering. A page of initial designs made by fifth grade children come from A. B. Sterling of Dexter, Maine. He says, "I began by having them first measure off an oblong 4 inches by 6 inches, then block out a simple letter on rough paper to fit well in this space 4 inches by 6 inches. Each pupil chose their own letter from the alphabet.

"After this was completed they made a tracing of their final letter in the space on the final paper, then each drew in their free-hand illustration. Then they used crayola to color them with, coloring the letters black, and choosing their colors for the illustration.

"Everyone in the class thoroughly enjoyed it and it was great fun to see the different illustrations they would draft out to go with the letters."

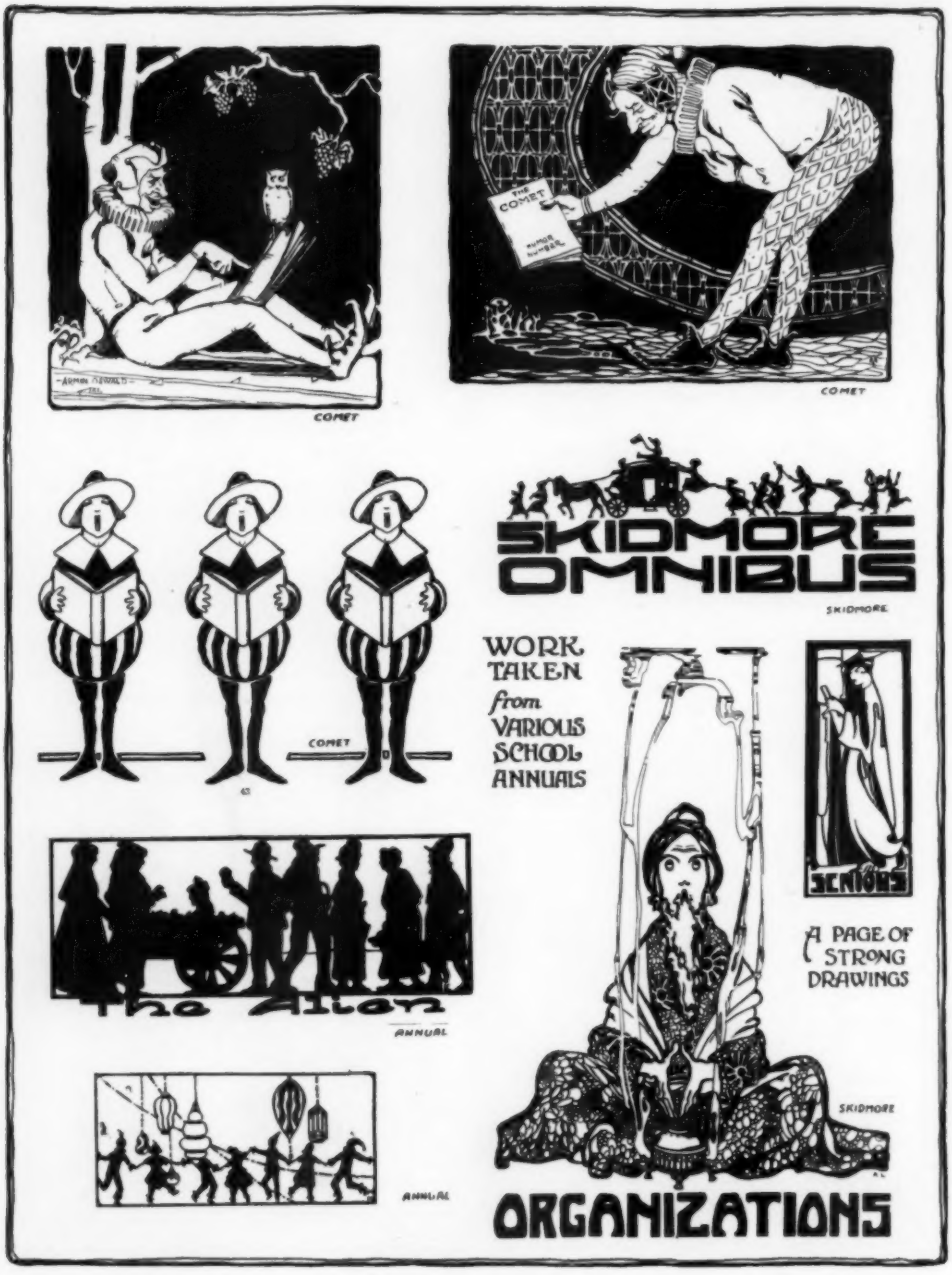
"'TIS THE CUSTOM OF SCHOOL-MASTERS TO BE ETERNALLY THUNDERING IN THEIR PUPILS' EARS, AS THEY WERE POURING INTO A FUNNEL, WHILST THEIR BUSINESS IS ONLY TO REPEAT WHAT THE OTHERS HAVE SAID BEFORE; NOW, I WOULD HAVE A TUTOR CORRECT THIS ERROR, PERMITTING HIS PUPIL HIMSELF TO CHOOSE AND DISCERN THEM, SOMETIMES OPENING THE WAY TO HIM, AND SOMETIMES ASKING HIM TO BREAK THE ICE HIMSELF; THAT IS, I WOULD NOT HAVE HIM ALONE TO INVENT AND SPEAK, BUT THAT HE SHOULD ALSO HEAR HIS PUPIL SPEAK IN TURN."

—*Montaigne.*



INITIAL LETTERS MADE BY FIFTH GRADE CHILDREN, DEXTER, MAINE, AND DESCRIBED BY A. B. STERLING ON THE OPPOSITE PAGE

The School Arts Magazine Alphabeticon, April 1922



TYPES OF HEAVY LINE AND DARK MASSES FOR SCHOOL ANNUALS SELECTED FROM VARIOUS SOURCES ILLUSTRATING GOOD WORK BY STUDENTS

TYPES OF LIGHT, DECORATING ILLUSTRATIONS THAT HAVE BEEN SUCCESSFULLY DRAWN AND USED IN SCHOOL ANNUALS RECEIVED FROM VARIOUS SCHOOLS

New Books for Teachers and Students

THE INTERNATIONAL STUDIO published at 44 Leicester Square, London, is the best general studio publication issued for the artist. It presents subjects fully illustrated with fine engravings and color plates on the fine and applied arts. The color plates alone are worth more than the price of each issue. The fine part of the *London edition* of the Studio is that it is not filling its pages with absolutely useless reproductions of ultra-modern types of art, for which the true type of American art teacher has no use.

THE PRINTING TEACHER, a monthly magazine issued by the National Association of Printing Teachers of Chicago, Illinois, is the latest addition to the literature issued to help the teacher. It is edited by John W. Hough, and is excellently planned with articles right to the point. Every teacher and educator interested in the noble art of printing should add this publication to their list of essential helps.

One hundred LOOSE LEAF LESSONS IN LETTERING is the latest production of William Hugh Gordon, author of Lettering for Commercial Purposes. These new lessons are based on a comparative method in which the music staff is used as a guide in aligning letters. The charts are simple and practical, assuring definite and well planned progress to the amateur letter. Published by "Signs of Times", Cincinnati, Ohio

EDUCATION IN HEALTH by Dr. George Payne of Harris Teachers' College, St. Louis, is a splendid book on Correlation. It indicates methods by which instruction in the vital subject of health in everyday life may be interwoven with the Language, Arithmetic and other lessons. Without adding to already overcrowded programs it helps the teacher in the protection of the well-being of her pupils. This book contains an especially interesting chapter on Health Instruction through Drawing. Publishers, Lyons and Carnahan, Chicago, Ill.

ART AND EDUCATION IN WOOD-TURNING by William W. Klenke, Instructor in Wood Working, Central High, Newark, N. J. Well illustrated and carefully planned, it gives over a hundred specific problems to be carried out by the student. It is adapted to normal schools, high schools and colleges. Publishers, Manual Arts Press, Peoria, Ill.

In the book DRAWING, A. S. Hartrick, R. W. S. gives some inspiring ideas in the study of art without losing sight of the academic spirit. His chapters on "Learning to See," "Style," and "Teaching of Drawing" are well worth reading. Publishers, Isaac Pitman and Sons, New York City.

MEMORY DRAWING, a companion book to DRAWING by Hartwick, is written by R. Catterson Smith, M. A It contains some splendid suggestions in the development of art ability through memory work. The author holds that truly creative art can be best developed through this channel. Publishers, Isaac Pitman and Sons.